Annex E City of Rocklin

E.1 Introduction

This Annex details the hazard mitigation planning elements specific to the City of Rocklin, a previously participating jurisdiction to the 2016 Placer County Local Hazard Mitigation Plan (LHMP) Update. This Annex is not intended to be a standalone document, but appends to and supplements the information contained in the Base Plan document. As such, all sections of the Base Plan, including the planning process and other procedural requirements apply to and were met by the City. This Annex provides additional information specific to Rocklin, with a focus on providing additional details on the risk assessment and mitigation strategy for this community.

E.2 Planning Process

As described above, Rocklin followed the planning process detailed in Chapter 3 of the Base Plan. In addition to providing representation on the Placer County Hazard Mitigation Planning Committee (HMPC), the City formulated their own internal planning team to support the broader planning process requirements. Internal planning participants, their positions, and how they participated in the planning process are shown in Table E-1. Additional details on Plan participation and City representatives are included in Appendix A.

Table E-1 City of Rocklin – Planning Team

Name	Position/Title	How Participated
Justin Nartker	Director of Public Services	Attended meetings, reviewed annex, provided past occurrences, filled out capability tables
Reginald Williams	Fire Chief	Attended meetings and reviewed annex
Shawn Watkins	Deputy Fire Chief	Attended meetings and reviewed annex
Jamie Sartain	Environmental Services Technician	Attended meetings reviewed annex, provided past occurrence info, filled out capability tables
David Mohlenbrok	Director of Community Development	Provided past occurrence info and coordinated responses from Community Development Department
Joshua Little	GIS Analyst II	Provided and reviewed GIS information and maps.
Ed Crouse	City Engineer	Reviewed Section E.7.2

Coordination with other community planning efforts is paramount to the successful implementation of this LHMP Update. This section provides information on how the City integrated the previously approved 2016 Plan into existing planning mechanisms and programs. Specifically, the City incorporated into or implemented the 2016 LHMP through other plans and programs shown in Table E-2.

Table E-2 2016 LHMP Incorporation

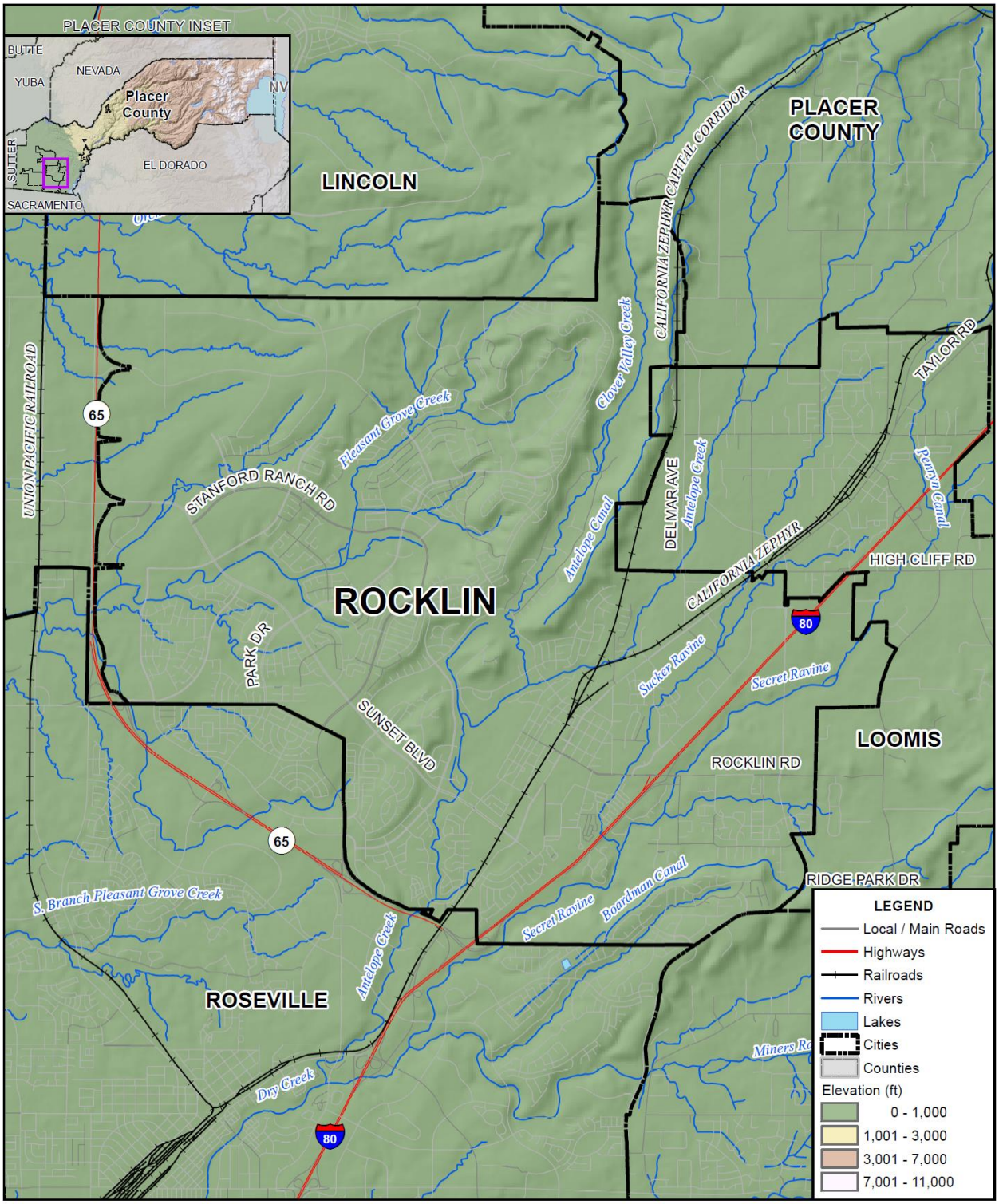
Planning Mechanism 2016 LHMP Was Incorporated/Implemented In.	Details: How was it incorporated?
2016 LHMP adopted by Resolution 2016-250	The City of Rocklin General Plan was amended to include the LHMP by resolution on November 8, 2016.

E.3 Community Profile

The community profile for the City of Rocklin is detailed in the following sections. Figure E-1 displays a City map and the location of Rocklin within Placer County.

CAL ATLAS HAS A SMALL ISLAND OF LOOMIS IN THE CITY OF ROCKLIN. IS THAT CORRECT?

Figure E-1 City of Rocklin



Data Source: Placer County GIS, Cal-Atlas, NVBLM; Map Date: 2021.

E.3.1. Geography and Climate

The City of Rocklin is located in the rolling hills of southwestern Placer County at an elevation range of 150 to 525 feet above sea level. Rocklin encompasses 20 square miles in area and is situated at the junction of I-80 and Highway 65, 21 miles northeast of Sacramento and 80 miles northeast of San Francisco. The City is on the fringe of the California's Central Valley, with productive agricultural lands to the west and Folsom Lake State Recreation Area and the Sierra Nevada Range to the east. Bordering Rocklin are the cities of Lincoln to the north, Roseville to the south, and Loomis to the east.

The climate in Rocklin is similar to other cities in the Central Valley region, with hot, dry summers and moderately wet winters. The average high temperature in July is 98°F and the average low temperature in January is 37°F. Average annual rainfall is 21 inches, with 96 percent of that total (19.7 inches) typically falling in the months of October-April.

E.3.2. History

Rocklin began as a railroad town with the Central Pacific moving to the area in 1864. In 1866, a major locomotive terminal was established in Rocklin because of its location at the "bottom of the hill." Additionally, the town was a major granite producer for the Sacramento Valley. In 1893, Rocklin officially incorporated with a population of 1,050. The town bustled with granite production and the commercial fruit industries until about 1908 when the Central Pacific decided to move the railroad roundhouse terminal to Roseville.

With soils generally of poor quality, commercial agriculture activities were difficult to support with the exception of livestock grazing. The J.P. Whitney family, a major landholder in the Rocklin from the late 1850s to 1949, raised sheep and conducted other ranching activities. Ranching occurred well into the 1950s and 1960s in the Rocklin area when increased urbanization and expansion of suburban communities from Sacramento to the northeast, along I-80, led to growth of the housing market. Beginning in the 1980s, the low cost of land attracted industry to the region and the expansion of commercial and residential development in south Placer County began.

E.3.3. Economy

US Census estimates show economic characteristics for the City of Rocklin. These are shown in Table E-3 and Table E-4. Mean household income in the City was $117,257. Median household income in the City was $98,566.

Table E-3 City of Rocklin – Civilian Employed Population 16 years and Over

Industry	Estimated Employment	Percent
Agriculture, forestry, fishing and hunting, and mining	0	0.0%
Construction	1,706	5.5%
Manufacturing	1,635	5.3%
Wholesale trade	598	1.9%

Industry	Estimated Employment	Percent
Retail trade	3,985	12.8%
Transportation and warehousing, and utilities	1,210	3.9%
Information	710	2.3%
Finance and insurance, and real estate and rental and leasing	2,771	8.9%
Professional, scientific, and management, and administrative and waste management services	4,741	15.3%
Educational services, and health care and social assistance	7,487	24.1%
Arts, entertainment, and recreation, and accommodation and food services	3,244	10.5%
Other services, except public administration	1,020	3.3%
Public administration	1,909	6.2%

Source: US Census Bureau American Community Survey 2013-2017 Estimates

Table E-4 City of Rocklin – Income and Benefits

Income Bracket	Percent
<$10,000	3.4%
$10,000 – $14,999	2.7%
$15,000 - $24,9999	4.4%
$25,000 – $34,999	4.9%
$35,000 – $49,999	7.7%
$50,000 – $74,999	12.3%
$75,000 – $99,999	15.3%
$100,000 – $149,999	22.7%
$150,000 – $199,999	12.4%
$200,000 or more	12.3%

Source: US Census Bureau American Community Survey 2013-2017 Estimates

Large Employers in the City include:

- Sierra Joint Community College District
- Rocklin Unified School District
- American Healthcare Administrative Services Inc.,
- S.E. Scher Corporation
- Wal-Mart Stores Inc.
- Chevron Corporation
- United Natural Foods West Inc.
- Ace Hardware Corporation

E.3.4. Population

The California Department of Finance estimated the January 1, 2020 total population for the City of Rocklin was 70,350.

E.4 Hazard Identification

Rocklin's identified the hazards that affect the City and summarized their location, extent, likelihood of future occurrence, potential magnitude, and significance specific to Rocklin (see Table E-5).

Table E-5 City of Rocklin—Hazard Identification Assessment

Hazard	Geographic Extent	Likelihood of Future Occurrences	Magnitude/ Severity	Significance	Climate Change Influence
Agricultural Hazards	Limited	Unlikely	Negligible	Low	Medium
Avalanche	Limited	Unlikely	Negligible	Low	Medium
Climate Change	Extensive	Unlikely	Limited	Low	–
Dam Failure	Limited	Unlikely	Negligible	Low	Medium
Drought & Water Shortage	Extensive	Likely	Negligible	Medium	High
Earthquake	Significant	Occasional	Limited	Low	Low
Floods: 1%/0.2% annual chance	Significant	Occasional	Limited	Low	Medium
Floods: Localized Stormwater	Limited	Likely	Negligible	Medium	Medium
Landslides, Mudslides, and Debris Flows	Limited	Unlikely	Limited	Low	Medium
Levee Failure	Limited	Unlikely	Limited	Low	Medium
Pandemic	Extensive	Likely	Critical	High	Medium
Seiche	Limited	Unlikely	Negligible	Low	Medium
Severe Weather: Extreme Heat	Extensive	Likely	Limited	Medium	High
Severe Weather: Freeze and Snow	Extensive	Likely	Limited	Medium	Medium
Severe Weather: Heavy Rains and Storms	Extensive	Likely	Critical	Medium	Medium
Severe Weather: High Winds and Tornadoes	Significant	Occasional	Negligible	Low	Low
Tree Mortality	Significant	Highly Likely	Limited	Low	High
Wildfire	Significant	Highly Likely	Limited	Medium	High

Geographic Extent
Limited: Less than 10% of planning area
Significant: 10-50% of planning area
Extensive: 50-100% of planning area

Likelihood of Future Occurrences
Highly Likely: Near 100% chance of occurrence in next year, or happens every year.
Likely: Between 10 and 100% chance of occurrence in next year, or has a recurrence interval of 10 years or less.
Occasional: Between 1 and 10% chance of occurrence in the next year, or has a recurrence interval of 11 to 100 years.
Unlikely: Less than 1% chance of occurrence in next 100 years, or has a recurrence interval of greater than every 100 years.

Magnitude/Severity
Catastrophic—More than 50 percent of property severely damaged; shutdown of facilities for more than 30 days; and/or multiple deaths.
Critical—25-50 percent of property severely damaged; shutdown of facilities for at least two weeks; and/or injuries and/or illnesses result in permanent disability.
Limited—10-25 percent of property severely damaged; shutdown of facilities for more than a week; and/or injuries/illnesses treatable do not result in permanent disability.
Negligible—Less than 10 percent of property severely damaged, shutdown of facilities and services for less than 24 hours; and/or injuries/illnesses treatable with first aid.

Significance
Low: minimal potential impact
Medium: moderate potential impact
High: widespread potential impact

Climate Change Influence
Low: minimal potential impact
Medium: moderate potential impact
High: widespread potential impact

E.5 Hazard Profile and Vulnerability Assessment

The intent of this section is to profile Rocklin's hazards and assess the City's vulnerability separate from that of the Placer County Planning Area as a whole, which has already been assessed in Section 4.3 Hazard Profiles and Vulnerability Assessment in the Base Plan. The hazard profiles in the Base Plan discuss overall impacts to the Placer County Planning Area and describes the hazard problem description, hazard location and extent, magnitude/severity, previous occurrences of hazard events and the likelihood of future occurrences. Hazard profile information specific to the City is included in this Annex. This vulnerability assessment analyzes the property, population, critical facilities, and other assets at risk to hazards ranked of medium or high significance specific to the City (as identified in the Significance column of Table E-5) and also includes a vulnerability assessment to the three primary hazards to the State of California: earthquake, flood, and wildfire. For more information about how hazards affect the County as a whole, see Chapter 4 Risk Assessment in the Base Plan.

E.5.1. Hazard Profiles

Each hazard vulnerability assessment in Section E.5.3, includes a hazard profile/problem description as to how each medium or high significant hazard affects the City and includes information on past hazard occurrences and the likelihood of future hazard occurrence. The intent of this section is to provide jurisdictional specific information on hazards and further describes how the hazards and risks differ across the Placer County Planning Area.

E.5.2. Vulnerability Assessment and Assets at Risk

This section identifies Rocklin's total assets at risk, including values at risk, populations at risk, critical facilities and infrastructure, natural resources, and historic and cultural resources. Growth and development trends are also presented for the community. This data is not hazard specific, but is representative of total assets at risk within the community.

Values at Risk

The following data from the Placer County Assessor's Office is based on the 2020 Assessor's data. The methodology used to derive property values is the same as in Section 4.3.1 of the Base Plan. This data should only be used as a guideline to overall values in the County, as the information has some limitations. The most significant limitations are created by Proposition 13 and the Williamson Act as detailed in the Base Plan. With respect to Proposition 13, instead of adjusting property values annually, the values are not adjusted or assessed at fair market value until a property transfer occurs. As a result, overall value information is most likely low and does not reflect current market value of properties within the County. It is also important to note, in the event of a disaster, it is generally the value of the infrastructure or improvements to the land that is of concern or at risk. Generally, the land itself is not a loss. However, depending on the type of hazard and impact of any given hazard event, land values may be adversely affected; thus, land values are included as appropriate. Table E-6 shows the 2020 Assessor's values and content replacement values (e.g., the values at risk) broken down by property type for the City.

Table E-6 City of Rocklin – Total Values at Risk by Property Use

Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Agricultural	5	0	$2,215,610	$0	$0	$2,215,610
Commercial	695	484	$438,468,211	$886,632,133	$886,632,133	$2,211,732,477
Industrial	198	154	$89,054,206	$195,266,485	$292,899,733	$577,220,424
Institutional	86	41	$44,602,355	$219,584,059	$219,584,059	$483,770,473
Miscellaneous	1,071	20	$54,243,557	$7,292,129	$7,292,129	$68,827,815
Natural / Open Space	640	5	$2,868,359	$9,089,248	$9,089,248	$21,046,855
Residential	20,962	20,305	$2,474,254,814	$6,849,309,220	$3,424,654,733	$12,748,218,767
Rocklin Total	**23,657**	**21,009**	**$3,105,707,112**	**$8,167,173,274**	**$4,840,152,035**	**$16,113,032,421**

Source: Placer County 2020 Parcel/Assessor's Data

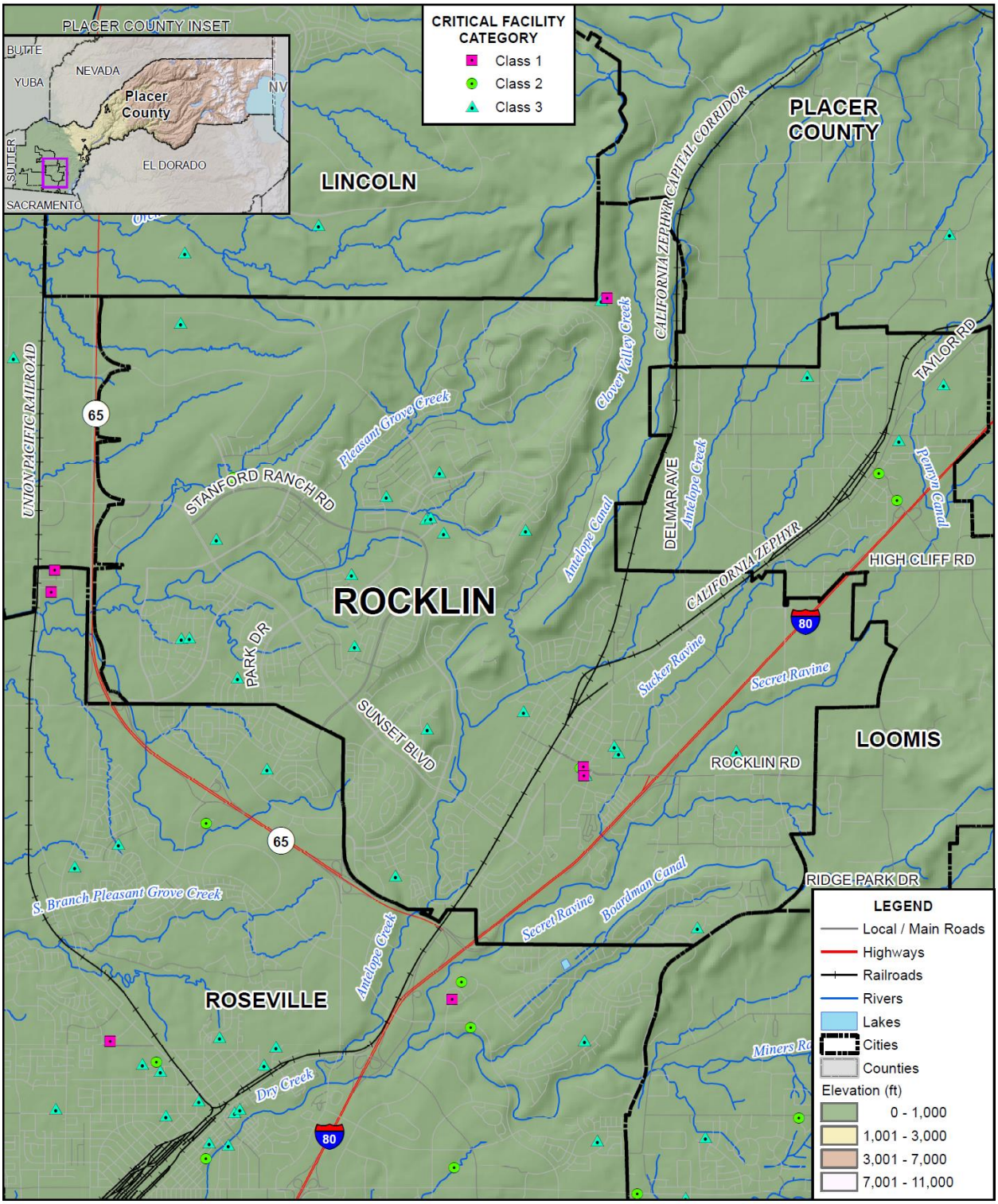
Critical Facilities and Infrastructure

Critical facilities and infrastructure are those buildings and infrastructure that are crucial to a community. Should these be damaged, it makes it more difficult for the community to respond to and recover from a disaster. For purposes of this plan, a critical facility is defined as:

> *Any facility, including without limitation, a structure, infrastructure, property, equipment or service, that if adversely affected during a hazard event may result in severe consequences to public health and safety or interrupt essential services and operations for the community at any time before, during and after the hazard event.*

This definition was refined by separating out three classes of critical facilities as further described in Section 4.3.1 of the base plan. An inventory of critical facilities in the City of Rocklin from Placer County GIS is shown on Figure E-2 and detailed in Table E-7. Details of critical facility definition, type, name, address, and jurisdiction by hazard zone are listed in Appendix F.

Figure E-2 City of Rocklin – Critical Facilities



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COUNTY OF Placer

Data Source: Placer County GIS, Cal-Atlas, NVBLM; Map Date: 2021.

Table E-7 City of Rocklin – Critical Facilities

Critical Facility Class	Critical Facility Type	Facility Count
Class 1	Communication Transmission Sites	1
	Dispatch Center	1
	Emergency Operation Center	1
Class 2	Fire Station	3
	Police Station	1
Class 3	Hall	2
	Hazardous Materials Facility	1
	School	19
	Water Treatment Plant	1
Rocklin Total		**30**

Source: Placer County GIS

Natural Resources

Natural resources are unique to each area and are difficult to replace. Should a natural disaster occur, these species and locations are at risk. The City of Rocklin has a variety of habitat types that include urban, annual grasslands, seasonal wetlands, riparian zones, and oak savannah woodlands. These environments support plant and wildlife that include protected and special status species listed in the Table E-8.

Table E-8 City of Rocklin's Protected and Special Status Species

Common Name	Reporting Agency	Protection Status	Habitat
Birds			
Aleutian Canada goose	USFWS	FD	Uses pastures and grain fields along the coasts of Oregon and California, and in California's Central Valley. Nest on maritime islands.
American peregrine falcon	USFWS	FD; CE	Wetlands, woodlands, forested areas, agricultural areas, and coastal habitats. Nesting sites on ledges.
Bank swallow	USFWS	CT	Riparian, lacustrine, and coastal areas with vertical banks, bluffs, and cliffs with sandy soil. Nest in colonies in burrows dug into riverbanks.
Black tern	USFWS	FSC; SC	Spring and summer in fresh emergent wetlands while breeding. Common on bays, salt ponds, river mouths and pelagic waters in spring and fall.
Burrowing owl	CNNDB/USFWS	SC, S2	Open grassland and desert habitats, in open parts of pinyon-juniper and ponderosa pine habitats. Uses rodent or other burrows for cover and nesting.
Cooper's hawk	GL-DEIR	SC	Oak woodlands, riparian or other forest habitat near water

Common Name	Reporting Agency	Protection Status	Habitat
Ferruginous hawk	USFWS	FSC; SC	Open grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys and fringes of pinyon-juniper habitats. Roosts in open area, usually in a lone tree or pole.
Golden eagle	GL-DEIR	SC, Fully Protected	Rolling hills, mountain areas, sage-juniper flats and deserts.
Grasshopper sparrow	USFWS	FSC	Tall and mixed grassland habitats including native prairies, hayfields, pastures, and fallow fields.
Greater sandhill crane	USFWS	CT	Wet meadows. Tend to nest in open habitat or in the cover of bulrush and bur reed.
Lawrence's goldfinch	USFWS	FSC	Open oak woodlands, mesquite, and riparian thickets.
Lewis' woodpecker	USFWS	FSC	Open pine-oak woodlands, coniferous forests, and riparian woodlands. Associated with burned and logged woodlands.
Little willow flycatcher	USFWS	CE	Wet meadows and montane riparian habitats with extensive willow thickets.
Loggerhead shrike	USFWS	FSC; SC	Open habitats with scattered shrubs, trees, utility lines or other perches. Lowlands and foothills throughout California.
Long-billed curlew	USFWS	FSC; SC	Wet meadow habitat, Coastal estuaries, upland herbaceous areas, and croplands.
Mountain plover	USFWS	FPT; SC	Short grasslands and plowed fields of the Central Valley.
Sharp-shinned hawk	GL-DEIR	SC	Deciduous riparian forest at mid-elevation, conifer forest, and oak woodlands.
Short-eared owl	USFWS	FSC; SC	Grasslands, prairies, dunes, meadows, irrigated lands and saline and fresh emergent wetlands. Nests in depression in dry ground concealed in vegetation.
Swainson's hawk	CNNDB/USFWS	CT	Open desert, grassland, or cropland with scattered, large trees or small groves.
Tricolored blackbird	CNNDB/USFWS	SC; S3	Emergent wetland vegetation with cattails, tules, and/or thickets.
Vaux's swift	USFWS	FSC; SC	Redwood and Douglas-fir habitats with nests in large hollow trees and snags.
Western spadefoot	CNNDB	SC	Primarily in grassland habitats, also found in valley-foothill hardwood woodlands.
White-faced ibis	USFWS	FSC; SC	Fresh emergent wetlands, shallow lacustrine waters, and the muddy ground or wet meadows and irrigated/flooded pastures and croplands.
White-tailed kite	CNNDB/USFWS	S3, Fully Protected	Lowland grasslands, agriculture, wetlands, oak-woodlands, savannah, and riparian habitats associated with open areas.

Common Name	Reporting Agency	Protection Status	Habitat
Reptiles			
California horned lizard	USFWS	FSC; SC	Wide range of habitats from gravelly-sandy substrate containing scattered shrubs, to clearing in riparian woodlands.
Giant garter snake	USFWS	FT; CT	Marshes, sloughs, and slow-moving creeks, with nocturnal retreats in holes and mammal burrows.
Northwestern Pond Turtle	USFWS	FSC; SC	Pacific slope drainages from Washington to Baja California.
Amphibians			
California red-legged frog	GL-DEIR	FT; SC	Pools, ponds, slow streams, and marshes.
Fish			
Central Valley fall/late fall-run Chinook salmon	USFWS	FC; SC	Wide range of habitats from gravelly-sandy substrate containing scattered shrubs, to clearing in riparian woodlands.
Central Valley steelhead	USFWS	FT	Marshes, sloughs, and slow-moving creeks, with nocturnal retreats in holes and mammal burrows.
Green sturgeon	USFWS	FSC; SC	Pacific slope drainages from Washington to Baja California.
Sacramento splittail	USFWS	FT; SC	Primarily in the Sacramento-San Joaquin estuary.
Winter-run Chinook salmon	USFWS	FE; CE	The ocean and the Sacramento River and its tributaries.
Invertebrates			
California Linderiella fairy shrimp	CNNDB/USFWS	S2/S3	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions.
Vernal Pool Tadpole Shrimp	CNNDB/USFWS	FE; S2/S3	Vernal pools and swales in the Sacramento Valley containing clear to highly turbid water.
Valley Elderberry Longhorn Beetle	CNNDB/USFWS	FT; S2	Only occurs in the Central Valley of California in association with Blue Elderberry (Sambucus mexicana).
Vernal Pool Fairy Shrimp	CNNDB/USFWS	FT; S2/S3	In a static rain-filled pools in the central valley grasslands and central and south coastal mountains.
Mammals			
Fringed myotis bat	USFWS	FSC	Roosts in caves, mines, and rock crevices within a variety of habitats.
Greater western mastiff-bat	USFWS	FSC; SC	Open, semi-arid to arid habitats, including conifer and deciduous woodlands, annual and perennial grasslands, chaparral, and urban.
Long-eared myotis bat	USFWS	FSC	Woodland and forest habitats, roosting in rock crevices, under bark, and tree snags.
Long-legged myotis bat	USFWS	FSC	Woodlands and forest habitats generally over 4,000 feet. Roosts in rock crevices, under bark, in tree snags, and cliffs.

Common Name	Reporting Agency	Protection Status	Habitat
Pacific western big-eared bat	USFWS	FSC; SC	All but alpine and sub-alpine habitats.
San Joaquin pocket mouse	USFWS	FSC	Dry, open grasslands or scrub area on fine textured soils in the Central and Salinas valleys.
Small-footed myotis bat	USFWS	FSC	Occurs in a variety of habitats, roosting in caves, crevices, and buildings.
Spotted bat	USFWS	FSC	Arid or ponderosa pine forests, and marshlands. Roosts in small cracks in cliffs and stony outcrops.
Yuma myotis bat	USFWS	FSC	Variety of habitats from juniper and riparian woodlands to desert regions near open water. Associates with water and roosts in caves, attics, under bridges, mines, and similar places.
Habitats			
Alkali Meadow	CNNDB	S2	
Alkali Seep	CNNDB	S2	
Northern Hardpan Vernal Pool	CNNDB	S3	
Northern Volcanic Mud Flow Vernal Pool	CNNDB	S1	
Plants			
Big-scale Balsamroot	CNNDB	S2	Valley and foothill grassland, cismontane woodland.
Boggs Lake Hedge-hyssop	CNNDB/USFWS	CE, S3	Clay soils in marshes, swamps and vernal pools.
Dwarf Downingia	CNNDB	S3	Valley and foothill grassland and several types of vernal pools.
Hispid Bird's-Beak	CNNDB/USFWS	FSC; S2	In damp alkaline soils in meadows, playas, and valley and foothill grassland.
Legenere	CNNDB/USFWS	FSC; S2	In beds of vernal pools.
Red Bluff Dwarf Rush	CNNDB	S2	Chaparral, valley and foothill grassland, cismontane woodlands, and vernal pools.

Source: Rocklin General Plan EIR, Appendix E, 2008

Historic and Cultural Resources

Historic and cultural resources are difficult to replace. Should a natural disaster occur, these properties and locations can be at risk.

The City of Rocklin has a stock of historically significant homes, public buildings, and landmarks. To inventory these resources, the HMPC collected information from a number of sources. The California Department of Parks and Recreation Office of Historic Preservation (OHP) was the primary source of information. OHP administers the National Register of Historic Places, the California Register of Historical Resources, California Historical Landmarks, and the California Points of Historical Interest programs. Each program has different eligibility criteria and procedural requirements. These requirements are detailed in Section 4.3.1 of the Base Plan. Table E-9 lists the historical buildings in the City.

Table E-9 City of Rocklin – Historical Resources

Resource Name (Plaque Number)	National Register	State Landmark	Point of Interest	Date Listed	City
Finnish Temperance Hall, Finn Hall (P664)			X	8/20/1985	Rocklin
First Transcontinental Railroad-Rocklin (780)		X		11/20/1962	Rocklin

Source: California Department of Parks and Recreation Office of Historic Preservation, http://ohp.parks.ca.gov/

It should be noted that these lists may not be complete, as they may not include those currently in the nomination process and not yet listed. Additionally, as defined by the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), any property over 50 years of age is considered a historic resource and is potentially eligible for the National Register. Thus, in the event that the property is to be altered, or has been altered, as the result of a major federal action, the property must be evaluated under the guidelines set forth by CEQA and NEPA. Structural mitigation projects are considered alterations for the purpose of this regulation.

Prehistoric Resources Present in the Rocklin Area

- Bedrock grinding mortars
- House pits (sites of prehistoric houses)
- Grinding stones
- Chipped stone tools
- Bone tools

Historic Resources Present in the Rocklin Area

- Historic foundations
- Rock walls
- Well pits
- Ditches
- Historic mines and mining artifacts

The Rocklin Historical Society (RHS) and Rocklin History Museum are key historic resources for the City.

Growth and Development Trends

As part of the planning process, the HMPC looked at changes in growth and development, both past and future, and examined these changes in the context of hazard-prone areas, and how the changes in growth and development affect loss estimates and vulnerability over time. Information from the City of Rocklin General Plan Housing Element, the California Department of Finance, the US Census Bureau form the basis of this discussion.

Historic Population Trends and Current Population

Population growth can increase the number of people living in hazard prone areas. Rocklin has generally seen steady periods of high growth. Rocklin has seen growth rates as shown in Table E-10.

Table E-10 City of Rocklin – Population Changes Since 1950

Year	Population	Change	% Change
1950	1,155	–	–
1960	1,495	340	29.4%
1970	3,039	1,544	103.3%
1980	7,344	4,305	141.7%
1990	19,033	11,690	159.2%
2000	36,330	17,297	90.9%
2010[1]	56,974	20,644	56.38%
2020[2]	70,350	13,376	23.5%

Source: [1]US Census Bureau, [2]California Department of Finance

Special Populations and Disadvantaged Communities

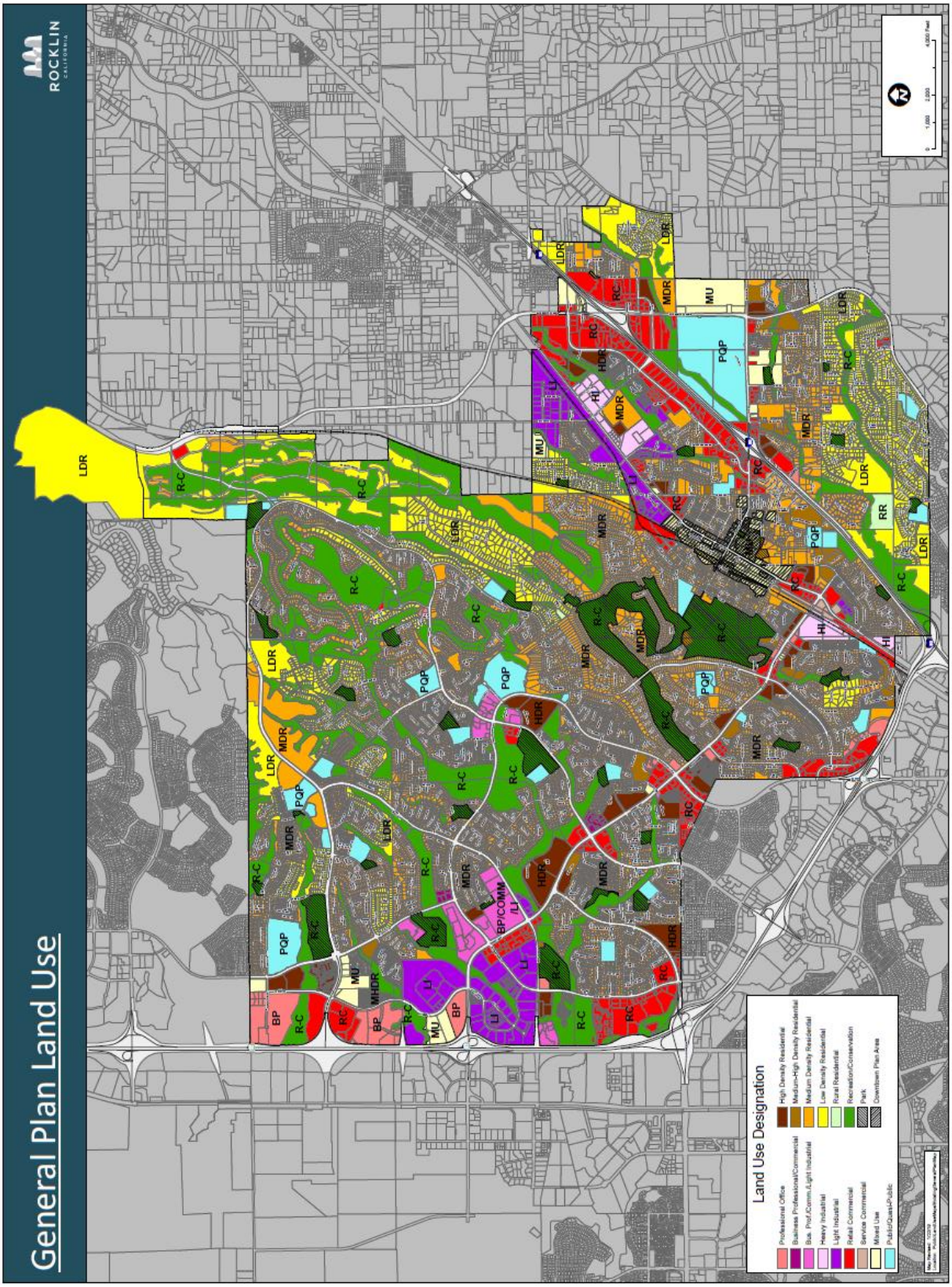
There are 55 and older age-restricted subdivisions in Rocklin and there are numerous congregate care/ assisted living facilities that are built or are being proposed to be built that have, or will have, elderly populations. Hazard-related concerns or issues regarding the vulnerability of elderly populations primarily relate to the potential need for evacuation of elderly citizens in the event of a hazard that creates a need for evacuations.

Land Use

State planning law requires that the land use element of a general plan include a statement of the standard population density, building intensity, and allowed uses for the various land use designations in the plan (Government Code Section 65302(a)). The City's land use designations are generally described below and mapped on the Land Use Diagram (Figure E-3). The Rocklin Municipal Code provides detailed land use and development standards for development.

With this General Plan, a variety of new land use designations have been established to reflect the more mixed and, in some cases, more intense land uses envisioned for Rocklin. New mixed-use designations provide the opportunity for a combination of residential, commercial, and office uses on a single site, depending on the designation. Future land use, dated 2019, for the City of Rocklin from the City of Rocklin General Plan Land Use Element is shown on Figure E-3.

Figure E-3 City of Rocklin – Land Use Diagram



Source: City of Rocklin General Plan Land Use Element

Development since 2016 Plan

As discussed in Section 4.3.1 of the Base Plan, future development has occurred in the City since the last plan. Some of this has occurred in hazard prone areas. The City Building Department tracked total building permits issued since 2016 for the City. These are tracked by total development, property use type, and hazard risk area. These are shown in Table E-11 and Table E-12. No development has occurred in hazard areas since 2016.

Table E-11 City of Rocklin – Total Development Since 2016

Property Use	2016	2017	2018	2019	2020
Agricultural	0	0	0	0	0
Commercial	10	9	9	9	4
Industrial	0	0	0	0	0
Residential	547	669	586	439	422
Unknown	0	0	0	0	0
Total	**557**	**678**	**595**	**448**	**426**

Source: City of Rocklin Building Department

Table E-12 City of Rocklin – Development in Hazard Areas since 2016

Property Use	1% Annual Chance Flood	Levee Protected Area	Wildfire Risk Area[1]	Other
Agricultural	0	0	0	0
Commercial	0	0	0	0
Industrial	0	0	0	0
Residential	0	0	0	0
Unknown	0	0	0	0
Total	**0**	**0**	**0**	**0**

Source: City of Rocklin Building Department

[1]Moderate or higher wildfire risk area

Future Development

The majority of future growth in Rocklin is anticipated to be concentrated in four areas: Clover Valley, the mid- to eastern portion of the Northwest Rocklin Annexation Area (Whitney Ranch), the Sierra College area and the Croftwood area, as these areas represent the last portions of the city with large tracts of vacant lands (see Figure 3.0-9, Neighborhood Areas, of the 2012 Rocklin General Plan Draft EIR). Because the City of Rocklin is surrounded by other jurisdictions on all sides, it is likely that the City boundaries will not expand beyond their current locations. The primary hazard in these undeveloped areas is wildland fires, as the areas contain extensive grasslands and oak woodlands. As these areas develop the majority of the grasslands and oak woodlands will be replaced with urban development and some of the current wildland hazards will be mitigated as a result of the development, but the development will also include the preservation of grassland and oak woodland areas that will create an urban/wildland fire hazard interface.

The Sacramento Council on Governments (SACOG) modeled population projections for the City of Rocklin and other areas of the region in 2012 for a Metropolitan Transportation Plan/Sustainable Communities Strategy report. This forecast uses a 2008 base year estimate with projections to 2020 and 2035 for population, housing units, households and employment. SACOG estimated the City population in 2020 and 2035 to be 65,845 and 72,312 respectively. Laura Webster asked for your contact information and said that she would call you to discuss since this can be looked at from many different perspectives.

Figure E-3 above shows the City of Rocklin's land use. While the map does not specifically identify future growth areas but some understanding of future growth areas can be obtained from the map by seeing areas that lack road infrastructure and individual lots versus those areas that show those features.

More general information on growth and development in Placer County as a whole can be found in "Growth and Development Trends" in Section 4.3.1 Placer County Vulnerability and Assets at Risk of the Base Plan.

GIS Analysis

PLACE

E.5.3. Vulnerability to Specific Hazards

This section provides the vulnerability assessment, including any quantifiable loss estimates, for those hazards identified above in Table E-5 as high or medium significance hazards. Impacts of past events and vulnerability of the City to specific hazards are further discussed below (see Section 4.1 Hazard Identification in the Base Plan for more detailed information about these hazards and their impacts on the Placer County Planning Area). Methodologies for evaluating vulnerabilities and calculating loss estimates are the same as those described in Section 4.3 of the Base Plan.

An estimate of the vulnerability of the City to each identified priority hazard, in addition to the estimate of likelihood of future occurrence, is provided in each of the hazard-specific sections that follow. Vulnerability is measured in general, qualitative terms and is a summary of the potential impact based on past occurrences, spatial extent, and damage and casualty potential. It is categorized into the following classifications:

- **Extremely Low**—The occurrence and potential cost of damage to life and property is very minimal to nonexistent.
- **Low**—Minimal potential impact. The occurrence and potential cost of damage to life and property is minimal.
- **Medium**—Moderate potential impact. This ranking carries a moderate threat level to the general population and/or built environment. Here the potential damage is more isolated and less costly than a more widespread disaster.
- **High**—Widespread potential impact. This ranking carries a high threat to the general population and/or built environment. The potential for damage is widespread. Hazards in this category may have occurred in the past.
- **Extremely High**—Very widespread with catastrophic impact.

Depending on the hazard and availability of data for analysis, this hazard specific vulnerability assessment also includes information on values at risk, populations at risk, critical facilities and infrastructure, and future development.

Drought & Water Shortage

Likelihood of Future Occurrence–Likely
Vulnerability–Medium

Hazard Profile and Problem Description

Drought is a complex issue involving many factors—it occurs when a normal amount of precipitation and snow is not available to satisfy an area's usual water-consuming activities. Drought can often be defined regionally based on its effects. Drought is different than many of the other natural hazards in that it is not a distinct event and usually has a slow onset. Drought can severely impact a region both physically and economically. Drought affects different sectors in different ways and with varying intensities. Adequate water is the most critical issue and is critical for agriculture, manufacturing, tourism, recreation, and commercial and domestic use. As the population in the area continues to grow, so will the demand for water.

Location and Extent

Drought and water shortage are regional phenomenon. The whole of the County, as well as the whole of the City, is at risk. The US Drought Monitor categorizes drought conditions with the following scale:

- None
- D0 – Abnormally dry
- D1 – Moderate Drought
- D2 – Severe Drought
- D3 – Extreme drought
- D4 – Exceptional drought

Drought has a slow speed of onset and a variable duration. Drought can last for a short period of time, which does not usually affect water shortages and for longer periods. Should a drought last for a long period of time, water shortage becomes a larger issue. Current drought conditions in the City and the County are shown in Section 4.2.11 of the Base Plan.

Past Occurrences

There have been two state and one federal disaster declaration from drought. This can be seen in Table E-13.

Table E-13 Placer County – State and Federal Drought Disaster Declarations 1950-2020

Disaster Type	State Declarations		Federal Declarations	
	Count	Years	Count	Years
Drought	1	2014	1	1977

Source: Cal OES, FEMA

Since drought is a regional phenomenon, past occurrences of drought for the City are the same as those for the County and includes 4 multi-year droughts since 1950. Details on past drought occurrences can be found in Section 4.2.11 of the Base Plan.

The City made changes to the vegetation in the landscaping and parks to be more drought tolerant and that required less water usage.

Vulnerability to and Impacts from Drought and Water Shortage

Based on historical information, the occurrence of drought in California, including the City, is cyclical, driven by weather patterns. Drought has occurred in the past and will occur in the future. Periods of actual drought with adverse impacts can vary in duration, and the period between droughts can be extended. Although an area may be under an extended dry period, determining when it becomes a drought is based on impacts to individual water users. Water in the City is provided by Placer County Water Agency. The City is not aware of any concerns to this water supply.

The vulnerability of the City to drought is City-wide, but impacts may vary and include reduction in water supply and an increase in dry fuels. The potential for a reduction in water supply during drought conditions generally leads to both mandated and voluntary conservation measures during extended droughts. During these times, the costs of water can also increase. The increased dry fuels and fuel loads associated with drought conditions can also result in an increased fire danger. In areas of extremely dry fuels, the intensity and speed of fires can be significant. Water supply and flows for fire suppression can also be an issue during extended droughts.

Other qualitative impacts associated with drought in the planning area are those related to water intensive activities such as, municipal usage, commerce, tourism, recreation and agricultural use. Drought conditions can also cause soil to compact and not absorb water well, potentially making an area more susceptible to flooding.

With more precipitation likely falling as rain instead of snow in the Sierra's, and warmer temperatures causing decreased snowfall to melt faster and earlier, water supply is likely to become more unreliable. In addition, drought and water shortage is predicted to become more common. This means less water available for use over the long run, and additional challenges for water supply reliability, especially during periods of extended drought.

Future Development

As the population in the area continues to grow, so will the demand for water. Ongoing planning will be needed by the City and water agencies to account for population growth and increased future water demands.

Flood: 1%/0.2% Annual Chance

Likelihood of Future Occurrence–Occasional/Unlikely
Vulnerability–Low

Although rated as a low significance hazard, due to its importance in Placer County and in California, the flood hazard is included here

Hazard Profile and Problem Description

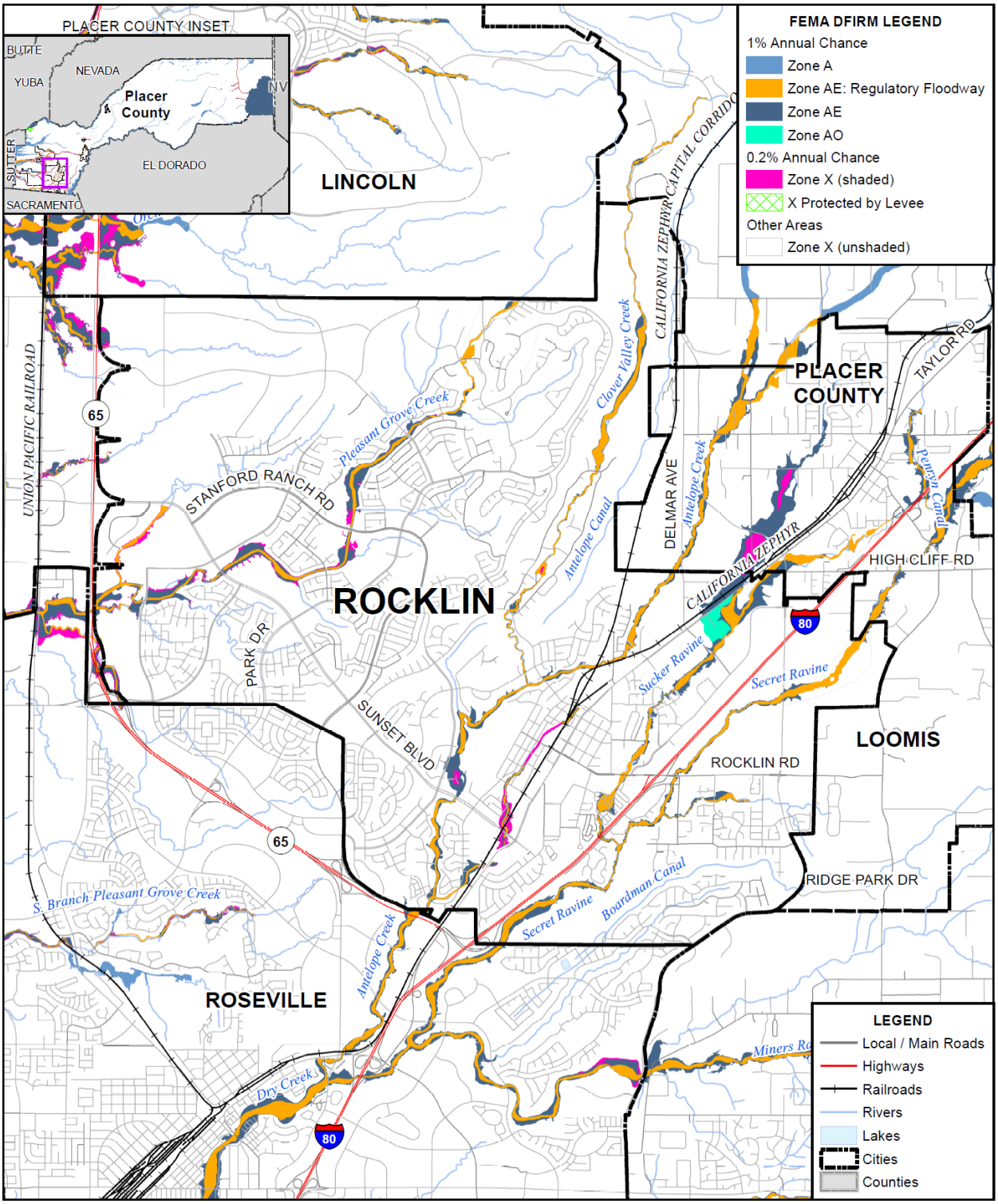
This hazard analyzes the FEMA DFIRM 1% and 0.2% annual chance floods. These tend to be the larger floods that can occur in the County or in the City, and have caused damages in the past. Flooding is a significant problem in Placer County and the City. Historically, the City has been at risk to flooding primarily during the winter and spring months when river systems in the County swell with heavy rainfall and snowmelt runoff. Normally, storm floodwaters are kept within defined limits by a variety of storm drainage and flood control measures. Occasionally, extended heavy rains result in floodwaters that exceed normal high-water boundaries and cause damage. Flooding has occurred both within the 1% and 0.2% annual chance floodplains and in other localized areas.

As previously described in Section 4.2.13 of the Base Plan, the Placer County Planning Area and the City of Rocklin have been subject to historical flooding. Rocklin is traversed by several stream systems and is at risk to the 1% and 0.2% flood.

Location and Extent

In the City of Rocklin, much of the flood damage occurs in the floodplains of Antelope Creek, Secret Ravine Creek, Clover Valley Creek, and Sucker Creek. The City of Rocklin has areas located in the 1% and 0.2% annual chance flood zones. This is seen in Figure E-4.

Figure E-4 City of Rocklin – FEMA DFIRM Flood Zones



FOSTER MORRISON CONSULTING

COUNTY OF Placer

Data Source: FEMA DFIRM 11/2/2018, Placer County GIS, Cal-Atlas, NVBLM; Map Date: 2021.

Table E-14 details the DFIRM mapped flood zones located within the City.

Table E-14 City of Rocklin– DFIRM Flood Hazard Zones

Flood Zone	Description	Flood Zone Present in City of Rocklin
A	1% annual chance flooding: No base flood elevations provided	
AE	1% annual chance flooding: Base flood elevations provided	X
AE Floodway	1% annual chance flood: Regulatory floodway; Base flood elevations provided	X
AO	1% annual chance flooding: sheet flow areas. BFEs derived from detailed hydraulic analyses are shown in this zone.	X
Shaded X	0.2% annual chance flooding: The areas between the limits of the 1% annual chance flood and the 0.2-percent-annual-chance (or 500-year) flood	X
X Protected by Levee	Areas protected by levees from 1% annual chance flood event. Levee protection places these areas in the 0.2% annual chance flood zone.	
X (unshaded)	No flood hazard	X

Source: FEMA

Additionally, flood extents can generally be measured in volume, velocity, and depths of flooding. Expected flood depths in the City vary, depending on the nature and extent of a flood event; specific depths are unknown. Flood durations in the City tend to be short to medium term, or until either the storm drainage system can catch up or flood waters move downstream. Flooding in the City tends to have a shorter speed of onset, due to the amount of water that flows through the City.

Geographical flood extents for the City from the FEMA DFIRMs are shown in Table E-15.

Table E-15 City of Rocklin – Geographical DFIRM Flood Zone Extents

Flood Zone	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
1% Annual Chance	602	4.8%	132	2.3%	470	6.9%
0.2% Annual Chance	46	0.4%	11	0.2%	34	0.5%
Other Areas	11,877	94.8%	5,600	97.5%	6,277	92.6%
Total	**12,524**	**100.0%**	**5,743**	**100.0%**	**6,781**	**100.0%**

Source: FEMA DFIRM 11/2/2018

Past Occurrences

A list of state and federal disaster declarations for Placer County from flooding is shown on Table E-16. These events also likely affected the City to some degree.

Table E-16 Placer County – State and Federal Disaster Declarations from Flood 1950-2020

Disaster Type	Federal Declarations		State Declarations	
	Count	Years	Count	Years
Flood (including heavy rains and storms)	16	1950, 1955, 1958 (twice), 1962, 1963, 1969, 1973, 1980, 1983, 1986, 1995 (twice), 1997, 2008, 2017	13	1955, 1958, 1962, 1964, 1969, 1983, 1986, 1995 (twice), 1997, 2006 (twice), 2017

Source: Cal OES, FEMA

Vulnerability to and Impacts from Flood

Floods have been a part of the City's historical past and will continue to be so in the future. During winter months, long periods of precipitation and the timing of that precipitation are critical in determining the threat of flood, and these characteristics further dictate the potential for widespread structural and property damages. Predominantly, the effects of flooding are generally confined to areas near the waterways of the County and City. As waterways grow in size from local drainages, so grows the threat of flood and dimensions of the threat. This threatens structures in the floodplain. Structures can also be damaged from trees falling as a result of water-saturated soils. Electrical power outages happen, and the interruption of power causes major problems. Loss of power is usually a precursor to closure of governmental offices and community businesses. Public schools may also be required to close or be placed on a delayed start schedule. Roads can be damaged and closed, causing safety and evacuation issues. People may be swept away in floodwaters, causing injuries or deaths.

Floods are among the costliest natural disasters in terms of human hardship and economic loss nationwide. Floods can cause substantial damage to structures, landscapes, and utilities as well as life safety issues. Floods can be extremely dangerous, and even six inches of moving water can knock over a person given a strong current. During a flood, people can also suffer heart attacks or electrocution due to electrical equipment short outs. Floodwaters can transport large objects downstream which can damage or remove stationary structures. Ground saturation can result in instability, collapse, or other damage. Objects can also be buried or destroyed through sediment deposition. Floodwaters can also break utility lines and interrupt services. Standing water can cause damage to crops, roads, foundations, and electrical circuits.

Assets at Risk

Based on the vulnerability of Rocklin to the flood hazard, the sections that follow describes significant assets at risk in the City of Rocklin. This section includes the values at risk, flooded acres, population at risk, and critical facilities at risk.

Values at Risk

GIS was used to determine the possible impacts of flooding within the City of Rocklin. The methodology described in Section 4.3.12 of the Base Plan was followed in determining structures and values at risk to the 1% (100-year) and 0.2% (500-year) annual chance flood event. Table E-17 is a summary table for the City of Rocklin. Parcel counts, values, estimated contents, and total values in the City are shown for the 1% and 0.2% annual chance flood zones, as well as for those properties that fall outside of the mapped FEMA DFIRM flood zones. Table E-18 breaks down Table E-17 and shows the property use, improved parcel count, improved values, estimated contents, and total values that fall in FEMA flood zones in the City.

Table E-17 City of Rocklin – Count and Value of Parcels at Risk in Summary DFIRM Flood Zones

Flood Zone	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
1% Annual Chance Flood Hazard	185	115	$23,373,619	$47,773,479	$37,270,632	$108,417,730
0.2% Annual Chance Flood Hazard	47	40	$4,015,333	$7,975,437	$4,436,746	$16,427,516
Other Areas	23,425	20,854	$3,078,318,160	$8,111,424,358	$4,798,444,657	$15,988,187,175
Rocklin Total	**23,657**	**21,009**	**$3,105,707,112**	**$8,167,173,274**	**$4,840,152,035**	**$16,113,032,421**

Source: FEMA 11/2/2018 DFIRM, Placer County 2020 Parcel/Assessor's Data

*With respect to improve parcels within the floodplain, the actual structures on the parcels may not be located within the actual floodplain, may be elevated and or otherwise outside of the identified flood zone

**This parcel count only includes those parcels in the 0.2% annual chance flood zone, exclusive of the 1% annual chance flood zone. The 0.2% annual chance flood, in actuality, also includes all parcels in the 1% annual chance flood zone.

Table E-18 City of Rocklin – Count and Values of Parcels at Risk by Detailed Flood Zone and Property Use

Flood Zone / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
1% Annual Chance Flood Hazard						
Zone AE Floodway						
Commercial	5	2	$848,703	$662,110	$662,110	$2,172,923
Industrial	2	0	$894,000	$0	$0	$894,000
Miscellaneous	13	0	$880,771	$0	$0	$880,771
Natural / Open Space	19	0	$46,852	$0	$0	$46,852
Residential	39	36	$5,678,475	$10,412,141	$5,206,070	$21,296,686
Zone AE Floodway Total	**78**	**38**	**$8,348,801**	**$11,074,251**	**$5,868,180**	**$25,291,232**

Flood Zone / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Zone AE						
Commercial	8	0	$1,763,567	$0	$0	$1,763,567
Industrial	2	0	$689,437	$0	$0	$689,437
Institutional	2	0	$0	$0	$0	$0
Miscellaneous	10	0	$88,434	$0	$0	$88,434
Natural / Open Space	5	0	$0	$0	$0	$0
Residential	69	68	$8,348,919	$23,332,419	$11,666,212	$43,347,550
Zone AE Total	**96**	**68**	**$10,890,357**	**$23,332,419**	**$11,666,212**	**$45,888,988**
Zone AO						
Commercial	1	1	$34,209	$79,840	$79,840	$193,889
Industrial	7	6	$3,903,145	$13,012,915	$19,519,373	$36,435,433
Miscellaneous	1	0	$0	$0	$0	$0
Residential	2	2	$197,107	$274,054	$137,027	$608,188
Zone AO Total	**11**	**9**	**$4,134,461**	**$13,366,809**	**$19,736,240**	**$37,237,510**
1% Annual Chance Flood Hazard Total	**185**	**115**	**$23,373,619**	**$47,773,479**	**$37,270,632**	**$108,417,730**
0.2% Annual Chance Flood Hazard						
Zone X (shaded)						
Commercial	2	1	$371,332	$382,832	$382,832	$1,136,996
Institutional	1	1	$79,248	$99,065	$99,065	$277,378
Miscellaneous	5	1	$183,955	$416,160	$416,160	$1,016,275
Natural / Open Space	1	0	$0	$0	$0	$0
Residential	38	37	$3,380,798	$7,077,380	$3,538,689	$13,996,867
Zone X (shaded) Total	**47**	**40**	**$4,015,333**	**$7,975,437**	**$4,436,746**	**$16,427,516**
0.2% Annual Chance Flood Hazard Total	**47**	**40**	**$4,015,333**	**$7,975,437**	**$4,436,746**	**$16,427,516**
Other Areas						
Zone X (unshaded)						
Agricultural	5	0	$2,215,610	$0	$0	$2,215,610
Commercial	679	480	$435,450,400	$885,507,351	$885,507,351	$2,206,465,102
Industrial	187	148	$83,567,624	$182,253,570	$273,380,360	$539,201,554
Institutional	83	40	$44,523,107	$219,484,994	$219,484,994	$483,493,095
Miscellaneous	1,042	19	$53,090,397	$6,875,969	$6,875,969	$66,842,335

Flood Zone / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Natural / Open Space	615	5	$2,821,507	$9,089,248	$9,089,248	$21,000,003
Residential	20,814	20,162	$2,456,649,515	$6,808,213,226	$3,404,106,735	$12,668,969,476
Zone X (unshaded) Total	**23,425**	**20,854**	**$3,078,318,160**	**$8,111,424,358**	**$4,798,444,657**	**$15,988,187,175**
Other Areas Total	**23,425**	**20,854**	**$3,078,318,160**	**$8,111,424,358**	**$4,798,444,657**	**$15,988,187,175**
Rocklin Grand Total	**23,657**	**21,009**	**$3,105,707,112**	**$8,167,173,274**	**$4,840,152,035**	**$16,113,032,421**

Source: FEMA 11/2/2018 DFIRM, Placer County 2020 Parcel/Assessor's Data

*With respect to improve parcels within the floodplain, the actual structures on the parcels may not be located within the actual floodplain, may be elevated and or otherwise outside of the identified flood zone

**This parcel count only includes those parcels in the 0.2% annual chance flood zone, exclusive of the 1% annual chance flood zone. The 0.2% annual chance flood, in actuality, also includes all parcels in the 1% annual chance flood zone.

Table E-19 summarizes Table E-18 above and shows City of Rocklin loss estimates and improved values at risk by FEMA 1% and 0.2% annual chance flood zones.

Table E-19 City of Rocklin – Flood Loss Estimates

Flood Zone	Total Parcel Count	Improved Parcel Count	Improved Structure Value	Estimated Contents Value	Total Value	Loss Estimate	Loss Ratio
1% Annual Chance Flood Hazard	185	115	$47,773,479	$37,270,632	$85,044,111	$17,008,822	0.029%
0.2% Annual Chance Flood Hazard	47	40	$7,975,437	$4,436,746	$12,412,183	$2,482,437	0.004%
Grand Total	**232**	**155**	**$55,748,916**	**$41,707,378**	**$97,456,294**	**$19,491,259**	**0.03%**

Source: FEMA 11/2/2018 DFIRM, Placer County 2020 Parcel/Assessor's Data

*With respect to improve parcels within the floodplain, the actual structures on the parcels may not be located within the actual floodplain, may be elevated and or otherwise outside of the identified flood zone

**This parcel count only includes those parcels in the 0.2% annual chance flood zone, exclusive of the 1% annual chance flood zone. The 0.2% annual chance flood, in actuality, also includes all parcels in the 1% annual chance flood zone.

According to Table E-18 and Table E-19, the City of Rocklin has 115 parcels and $85 million of structure and contents values or values in the 1% annual chance flood zone, and 40 improved parcels and $12.4 million of structure and contents values in the 0.2% annual chance flood zone. These values can be refined a step further. Applying the 20 percent damage factor as previously described in Section 4.3.10 of the Base Plan, there is a 1% chance in any given year of a flood event causing $17.0 million in damage and a 0.2%

chance in any given year of a flood event causing $2.5 million in damage in the City of Rocklin. The loss ratio of 0.029% and 0.004% indicates that flood losses for 1% and 0.2% annual chance flooding, respectively, would be minor and able to recover from.

Flooded Acres

Also of interest is the land area affected by the various flood zones. The following is an analysis of flooded acres in the City in comparison to total area within the City limits. The same methodology, as discussed in Section 4.3.12 of the Base Plan, was used for the City of Rocklin as well as for the County as a whole. Table E-20 represents a detailed and summary analysis of total acres for each FEMA DFIRM flood zone in the City.

Table E-20 City of Rocklin – Flooded Acres by Flood Zone

Flood Zone / Property Use	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
1% Annual Chance Flood Hazard						
Zone A						
Agricultural	0	0.00%	0	0.00%	0	0.00%
Commercial	0	0.00%	0	0.00%	0	0.00%
Industrial	0	0.00%	0	0.00%	0	0.00%
Institutional	0	0.00%	0	0.00%	0	0.00%
Miscellaneous	0	0.000%	0	0.00%	0	0.000%
Natural / Open Space	0	0.00%	0	0.00%	0	0.00%
Residential	0	0.00%	0	0.00%	0	0.00%
Zone A Total	**0**	**0.000%**	**0**	**0.00%**	**0**	**0.000%**
Zone AE Floodway						
Agricultural	1	0.000%	0	0.00%	1	0.000%
Commercial	27	0.003%	11	0.006%	16	0.002%
Industrial	22	0.002%	2	0.001%	20	0.003%
Institutional	13	0.001%	1	0.000%	12	0.002%
Miscellaneous	97	0.011%	0	0.000%	97	0.013%
Natural / Open Space	82	0.009%	4	0.002%	78	0.011%
Residential	56	0.006%	48	0.027%	8	0.001%
Zone AE Floodway Total	**298**	**0.033%**	**66**	**0.036%**	**232**	**0.032%**
Zone AE						
Agricultural	1	0.000%	0	0.00%	1	0.000%
Commercial	30	0.003%	8	0.004%	22	0.003%
Industrial	16	0.002%	2	0.001%	14	0.002%

Flood Zone / Property Use	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Institutional	8	0.001%	0	0.000%	7	0.001%
Miscellaneous	95	0.011%	0	0.000%	95	0.013%
Natural / Open Space	91	0.010%	3	0.002%	88	0.012%
Residential	38	0.004%	34	0.019%	4	0.001%
Zone AE Total	**279**	**0.031%**	**47**	**0.026%**	**232**	**0.032%**
Zone AO						
Agricultural	0	0.00%	0	0.00%	0	0.00%
Commercial	1	0.000%	1	0.000%	0	0.00%
Industrial	19	0.002%	17	0.009%	2	0.000%
Institutional	0	0.00%	0	0.00%	0	0.00%
Miscellaneous	3	0.000%	0	0.00%	3	0.000%
Natural / Open Space	0	0.00%	0	0.00%	0	0.00%
Residential	2	0.000%	2	0.001%	0	0.00%
Zone AO Total	**24**	**0.003%**	**19**	**0.011%**	**5**	**0.001%**
1% Annual Chance Flood Hazard Total	**602**	**0.067%**	**132**	**0.073%**	**470**	**0.065%**
0.2% Annual Chance Flood Hazard						
Zone X (shaded)						
Agricultural	0		0		0	
Commercial	6	0.001%	3	0.002%	3	0.000%
Industrial	1	0.000%	0	0.000%	1	0.000%
Institutional	0	0.000%	0	0.000%	0	0.000%
Miscellaneous	14	0.002%	0	0.000%	14	0.002%
Natural / Open Space	16	0.002%	0	0.00%	16	0.002%
Residential	8	0.001%	7	0.004%	1	0.000%
Zone X (shaded) Total	**46**	**0.005%**	**11**	**0.006%**	**34**	**0.005%**
0.2% Annual Chance Flood Hazard Total	**46**	**0.005%**	**11**	**0.006%**	**34**	**0.005%**
Other Areas						
Zone X (unshaded)						
Agricultural	52	0.006%	0	0.00%	52	0.007%
Commercial	1,116	0.124%	634	0.352%	482	0.067%

Flood Zone / Property Use	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Industrial	374	0.042%	211	0.117%	163	0.023%
Institutional	753	0.084%	140	0.078%	613	0.085%
Miscellaneous	3,380	0.376%	3	0.002%	3,376	0.470%
Natural / Open Space	1,556	0.173%	140	0.078%	1,416	0.197%
Residential	4,647	0.517%	4,471	2.483%	176	0.024%
Zone X (unshaded) Total	**11,877**	**1.321%**	**5,600**	**3.110%**	**6,277**	**0.873%**
Other Areas Total	**11,877**	**1.321%**	**5,600**	**3.110%**	**6,277**	**0.873%**
Rocklin Grand Total	**12,524**	**1.393%**	**5,743**	**3.189%**	**6,781**	**0.943%**

Source: FEMA 11/2/2018 DFIRM

Population at Risk

The DFIRM flood zones were overlayed on the parcel layer. Those residential parcel centroids that intersect the flood zones were counted and multiplied by the 2010 Census Bureau average household factors for Rocklin – 2.68. According to this analysis, there is a total population of 284 and 99 residents of the City at risk to flooding in the 1% and 0.2% annual chance floodplains, respectively. This is shown in Table E-21.

Table E-21 City of Rocklin – Count of Improved Residential Parcels and Population by Flood Zone

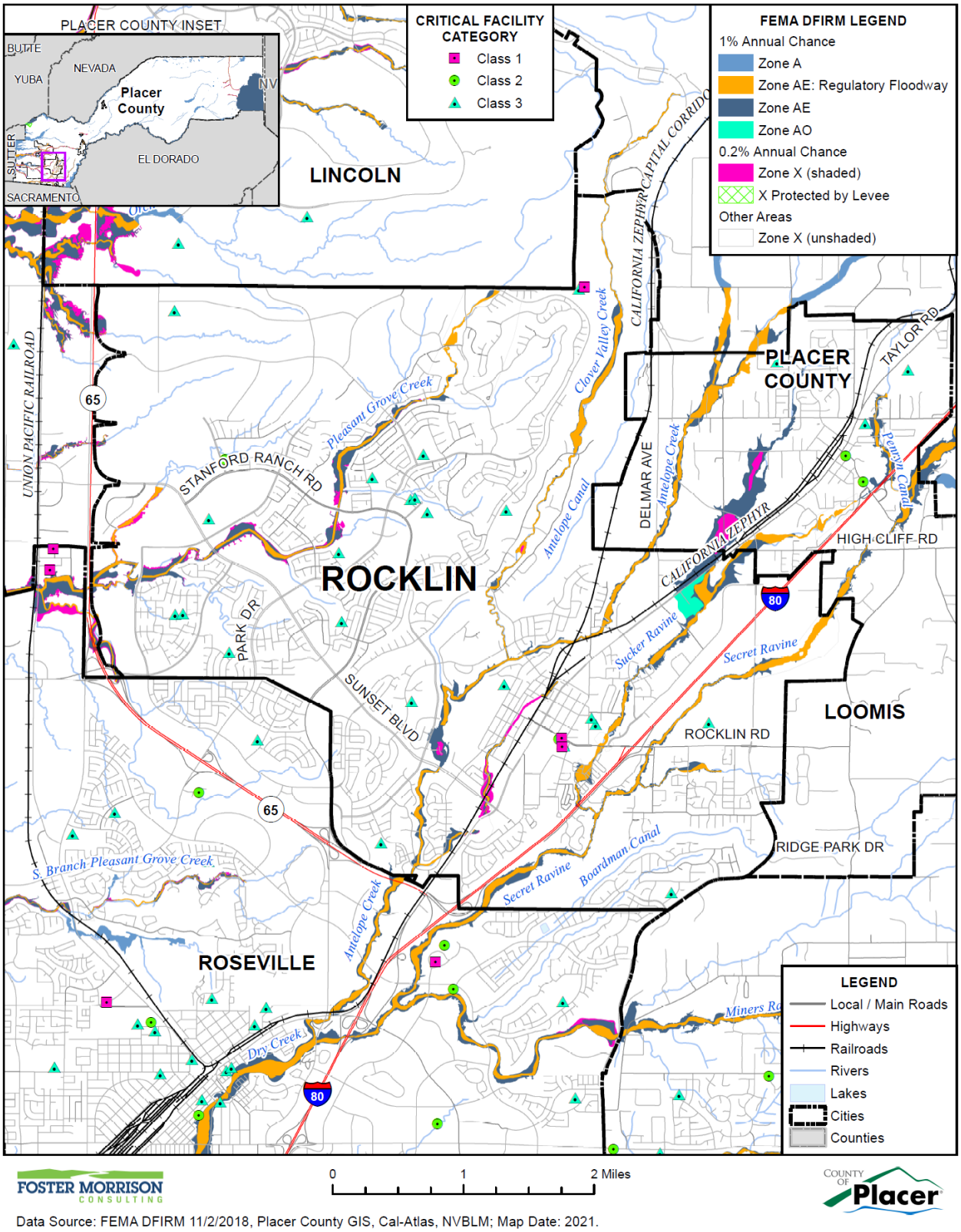
Jurisdiction	1% Annual Chance		0.2% Annual Chance	
	Improved Residential Parcels	Population at Risk	Improved Residential Parcels	Population at Risk
Rocklin	106	284	37	99

Source: FEMA DFIRM 11/2/2018, Placer County 2020 Parcel/Assessor's Data, US Census Bureau

Critical Facilities at Risk

An analysis was performed on the critical facility inventory in Rocklin in identified DFIRM flood zones. Critical facilities in a FHSZ in the City of Rocklin are shown in Figure E-8 and detailed in Table E-34. As shown, no critical facilities fall in any mapped DFIRM flood zone. Details of critical facility definition, type, name and address and jurisdiction by fire hazard severity zone are listed in Appendix F.

Figure E-5 City of Rocklin – Critical Facilities in DFIRM Flood Zones



Data Source: FEMA DFIRM 11/2/2018, Placer County GIS, Cal-Atlas, NVBLM; Map Date: 2021.

Table E-22 City of Rocklin – Critical Facilities by DFIRM Flood Zone

Flood Zone	Critical Facility Class	Critical Facility Type	Facility Count
Other Areas			
Zone X (unshaded)	Class 1	Communication Transmission Sites	1
		Dispatch Center	1
		Emergency Operation Center	1
	Class 2	Fire Station	3
		Police Station	1
	Class 3	Hall	2
		Hazardous Materials Facility	1
		School	19
		Water Treatment Plant	1
Zone X (unshaded) Total			**30**
Other Areas Total			**30**
Rocklin Total			**30**

Source: CAL FIRE, Placer County

Insurance Coverage, Claims Paid, and Repetitive Losses

The City of Rocklin joined the National Flood Insurance Program (NFIP) on May 15, 1984. The City does not participate in CRS program. NFIP data indicates that as of August 21, 2020, there were 145 flood insurance policies in force in the City with $47,806,200 of coverage. Of the 145 policies, 131 were residential (single-family homes) and 12 were non-residential. Of the 145 policies, 39 are in the A zones, and 106 are in the in B, C, and X zones. There have been 26 historical claims for flood losses totaling $250,459.45. There has been 1 substantial damage claim since 1978. NFIP data further indicates that there are 4 repetitive loss (RL) and 0 or severe repetitive loss (SRL) buildings in Rocklin. The Planning Team for the City did further research:

- One of the 3 RL properties is located in another jurisdiction (community of Granite Bay in unincorporated Placer County).
- The second of the 3 RL properties is on Cimerron Court. The property includes both X and AE zones.
- The final of the 3 RL properties is on Rocklin Road. It is a mobile home park in both the X and AE Zone. This is a mobile home park. The City could not identify a particular property as FEMA provided only the generic address for the park. A small portion of this mobile home park was subject to a FEMA LOMR in 2015, but the majority of the park was not.

ANY INFO ON THE 4TH BUILDING? UPDATE – HAVE ANY OF THESE RL PROPERTIES BEEN MITIGATED? E-mail sent to Planner of the day for further info or direction on where to find the info.

Based on this analysis of insurance coverage, the City has values at risk to the 1% annual chance and greater floods. Of the 115 improved parcels within the 1% annual chance flood zone, only 39 (or 39.8 percent) of those parcels maintain flood insurance. This can be seen on Table E-23.

Table E-23 City of Rocklin – Percentage of Policy Holders to Improved Parcels in the 1% Annual Chance Floodplain

Jurisdiction	Improved Parcels in SFHA (1% Annual Chance) Floodplain*	Insurance Policies in the SFHA (1% Annual Chance) Floodplain	Percentage of 1% Annual Chance Floodplain Parcels Currently Insured
City of Rocklin	115	39	39.8%

Source: FEMA DFIRM 11/2/2018, Placer County 2020 Parcel/Assessor's Data

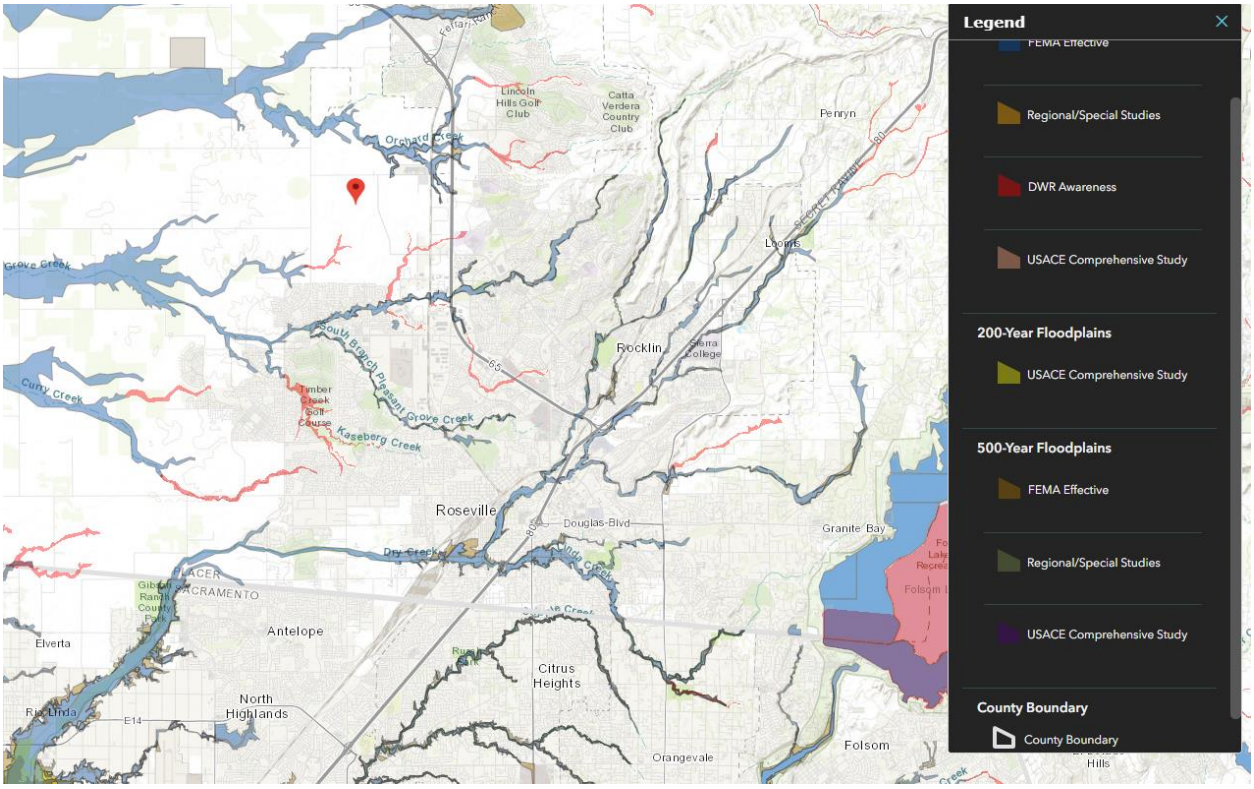
California Department of Water Resources Best Available Maps (BAM)

The FEMA regulatory maps provide just one perspective on flood risks in Placer County. Senate Bill 5 (SB 5), enacted in 2007, authorized the California DWR to develop the Best Available Maps (BAM) displaying 100- and 200-year floodplains for areas located within the Nevada-San Joaquin (SAC-SJ) Valley watershed. This effort was completed by DWR in 2008. DWR has expanded the BAM to cover all counties in the State and to include 500-year floodplains.

Different than the FEMA DFIRMs which have been prepared to support the NFIP and reflect only the 100-year event risk, the BAMs are provided for informational purposes and are intended to reflect current 100-, 200-(as applicable), and 500-year event risks using the best available data. The 100-year floodplain limits on the BAM are a composite of multiple 100-year floodplain mapping sources. It is intended to show all currently identified areas at risk for a 100-year flood event, including FEMA's 100-year floodplains. The BAM are comprised of different engineering studies performed by FEMA, Corps, and DWR for assessment of potential 100-, 200-, and 500-year floodplain areas. These studies are used for different planning and/or regulatory applications, and for each flood frequency may use varied analytical and quality control criteria depending on the study type requirements.

The value in the BAMs is that they provide a bigger picture view of potential flood risk to the City than that provided in the FEMA DFIRMs. The BAM map for Rocklin is shown in Figure E-6.

Figure E-6 City of Rocklin – Best Available Map



Source: California DWR

Legend explanation: Blue - FEMA 1%, Orange – Local 1% (developed from local agencies), Red – DWR 1%r (Awareness floodplains identify the 1% annual chance flood hazard areas using approximate assessment procedures.), Pink – USACE 1% (2002 Sac and San Joaquin River Basins Comp Study), Yellow – USACE 0.5% (2002 Sac and San Joaquin River Basins Comp Study), Tan – FEMA 0.2%, Grey – Local 0.2% (developed from local agencies), Purple – USACE 0.2% (2002 Sac and San Joaquin River Basins Comp Study).

Future Development

The potential for flooding may increase as floodwaters are channeled due to land development. Such changes can exacerbate flooding problems inside and outside of natural floodplains by altering or confining natural drainage channels. Floodplain modeling and master planning should be based on build out property use to ensure that all new development remains safe from future flooding. While local floodplain management, stormwater management, and water quality regulations and policies address these changes on a site-by-site basis, their cumulative effects can have a negative impact on the overall floodplain.

The City evaluates each proposed development project to determine if it is in or near a floodplain. It if it is, the City requires that any structure by constructed out of the floodplain and have a first floor at least two feet above the 100-year floodplain elevation. The City also continues to explore ways to address floodplain issues through the use of drainage studies, drainage improvements, elevation certificates and other available strategies. The City has a GIS Division which assists in the development of GIS-based mapping of pertinent information. This data can be used by all departments and agencies for emergency pre-planning and during emergency incidents.

GIS Analysis

PLACE

Flood: Localized Stormwater Flooding

Likelihood of Future Occurrence–Likely
Vulnerability–Medium

Hazard Profile and Problem Description

Flooding occurs in areas other than the FEMA mapped 1% and 0.2% annual chance floodplains. Flooding may be from drainages not studied by FEMA, lack of or inadequate drainage infrastructure, or inadequate maintenance. Localized, stormwater flooding occurs throughout the County during the rainy season from November through April. Prolonged heavy rainfall contributes to a large volume of runoff resulting in high peak flows of moderate duration.

Location and Extent

The City of Rocklin is subject to localized flooding throughout the City. Flood extents are usually measured in areas affected, velocity of flooding, and depths of flooding. Expected flood depths in the City vary by location. Flood durations in the City tend to be short to medium term, or until either the storm drainage system can catch up or flood waters move downstream. Localized flooding in the City tends to have a shorter speed of onset, especially when antecedent rainfall has soaked the ground and reduced its capacity to absorb additional moisture.

Past Occurrences

The City noted that localized flood is an annual occurrence. Specific incidences of damages from localized flooding that could not be recalled.

Vulnerability to and Impacts from Localized Flooding

Historically, much of the growth in the City and County has occurred adjacent to streams, resulting in significant damages to property, and losses from disruption of community activities when the streams overflow. Additional development in the watersheds of these streams affects both the frequency and duration of damaging floods through an increase in stormwater runoff.

The City tracks localized flooding areas. Affected localized flood areas identified by the City of Rocklin are summarized in Table E-24.

Table E-24 City of Rocklin – List of Localized Flooding Problem Areas

Road Name	Flooding	Pavement Deterioration	Washouts	High Water/ Creek Crossing	Landslides/ Mudslides	Debris	Downed Trees
Second Street	X						
Cimerron Court	X						
Farrier Drive				X			
Paragon Court	X						
El Don Drive	X			X			
Aguilar Road	X	X	X	X			
Fleet Circle	X						
Bryce Court	X						

Source: City of Rocklin

Primary concerns associated with stormwater flooding include impacts to infrastructure that provides a means of ingress and egress throughout the community. Ground saturation can result in instability, collapse, or other damage to trees, structures, roadways and other critical infrastructure. Objects can also be buried or destroyed through sediment deposition. Floodwaters can break utility lines and interrupt services. Standing water can cause damage to crops, roads, and foundations. Other problems connected with flooding and stormwater runoff include erosion, sedimentation, degradation of water quality, losses of environmental resources, and certain health hazards.

Future Development

Future development in the City will add more impervious surfaces causing an increase in stormwater runoff and the continued need to drain these waters. The City will need to be proactive to ensure that increased development has proper siting and drainage for stormwaters. The risk of localized flooding to future development can also be minimized by accurate recordkeeping of repetitive localized storm activity. Mitigating the root causes of the localized stormwater flooding will reduce future risks of losses. The City has a GIS Division which assists in the development of GIS-based mapping of pertinent information. This data can be used by all departments and agencies for emergency pre-planning and during emergency incidents.

Pandemic

Likelihood of Future Occurrence–Likely
Vulnerability–Medium

Hazard Profile and Problem Description

According to the World Health Organization (WHO), a disease epidemic occurs when there are more cases of that disease than normal. A pandemic is a worldwide epidemic of a disease. A pandemic may occur when a new virus appears against which the human population has no immunity. It is important to realize

that this LHMP Update does not examine pandemic contingency plans, but instead focuses on examining the risk of a normal hazard occurrence.

A pandemic occurs when a new virus emerges for which people have little or no immunity, and for which there is no vaccine. This disease spreads easily person-to-person, causes serious illness, and can sweep across the country and around the world in a very short time. The U.S. Centers for Disease Control and Prevention has been working closely with other countries and the World Health Organization to strengthen systems to detect outbreaks of that might cause a pandemic and to assist with pandemic planning and preparation. An especially severe a pandemic could lead to high levels of illness, death, social disruption, and economic loss.

Location and Extent

During a pandemic, the whole of the City, County, and surrounding region is at risk, as pandemic is a regional, national, or international event. The speed of onset of pandemic is usually short, while the duration is variable, but can last for more than a year as shown in the 1918/1919 Spanish Flu. There is no scientific scale to measure the magnitude of pandemic. Pandemics are usually measured in numbers affected by the pandemic, and by number who die from complications from the pandemic.

Past Occurrences

There has been one state and federal disaster declaration due to pandemic, as shown in Table E-25.

Table E-25 Placer County – State and Federal Pandemic Disaster Declarations 1950-2020

Disaster Type	Federal Declarations		State Declarations	
	Count	Years	Count	Years
Pandemic	1	2020	1	2020

Source: Cal OES, FEMA

The 20th century saw three outbreaks of pandemic flu.

- The **1918-1919 Influenza Pandemic (H1N1)**
- The **February 1957-1958 Influenza Pandemic (H2N2)**
- The **1968 Influenza Pandemic (H3N2)**

To date, the 21st century has seen two acknowledged pandemics.

- **2009 Swine Flu (H1N1**)
- **2019/2020 COVID 19**

SPECIFICS ON HOW CITY WAS AFFECTED

Vulnerability to and Impacts from Pandemic

Pandemic has and will continue to have impacts on human health in the region. A pandemic occurs when a new virus emerges for which there is little or no immunity in the human population; the virus causes

serious illness and spreads easily from person-to-person worldwide. There are several strategies that public health officials can use to combat pandemic. Constant surveillance regarding current pandemic, use of infection control techniques, and administration of vaccines once they become available. Citizens can help prevent spread of a pandemic by staying home, or "self-quarantining," if they suspect they are infected. Pandemic does not affect the buildings, critical facilities, and infrastructure in the City. Pandemic can have varying levels of impact to the citizens of the City and greater County, depending on the nature of the pandemic and often on preexisting conditions of those exposed.

Hospitalizations and deaths can occur, especially to the elderly or those with pre-existing underlying conditions. As seen with Covid-19, multiple businesses were forced to close temporarily (some permanently) an unemployment rose significantly. Supply chains for food can be interrupted. Prisons may need to release prisoners to comply with social distance standards.

Impacts could range from school and business closings to the interruption of basic services such as public transportation, health care, and the delivery of food and essential medicines. Funding Revenues decreased in areas such as Gas Tax, Transportation/Occupancy, Community Development, recreation programs/events, etc. Residents and City employees sheltered in place, and in some cases worked from home, further reducing overall revenues in the community. Additional expenses were incurred by the City for items including Personal Protective Equipment and physical barriers (e.g. front counter enclosure, sneeze guards at cubicles).

Future Development

Future development is not expected to be significantly impacted by this hazard, though population growth in the City could increase exposure to a pandemic, and increase the ability of each disease to be transmitted among the population of the City. If the median age of City residents continues to increase, vulnerability to pandemic diseases may increase, due to the fact that these diseases are often more deadly to senior citizens.

Severe Weather: Extreme Heat

Likelihood of Future Occurrence–Likely
Vulnerability–Medium

Hazard Profile and Problem Description

According to FEMA, extreme heat is defined as temperatures that hover 10 degrees or more above the average high temperature for the region and lasts for several weeks. Heat kills by taxing the human body beyond its abilities. In extreme heat and high humidity, evaporation is slowed, and the body must work extra hard to maintain a normal temperature." Most heat disorders occur because the victim has been overexposed to heat or has over-exercised for his or her age and physical condition. Older adults, young children, and those who are sick or overweight are more likely to succumb to extreme heat.

In addition to the risks faced by citizens of the City, there are risk to the built environment from extreme heat. While extreme heat on its own does not usually affect structures, extreme heat during times of drought can cause wildfire risk to heighten. Extreme heat and high winds can cause Public Safety Power Shutdown

(PSPS) events, creating significant issues in the City. However, PSPS events in the City have been declining with PG&E's refined system for shutting power off in high wildfire risk areas. The City noted that PG&E has isolated their system and, in theory, Rocklin's impact from future PSPS could be minimized greatly if implemented correctly.

Location and Extent

Heat is a regional phenomenon and affects the whole of the City. Heat emergencies are often slower to develop, taking several days of continuous, oppressive heat before a significant or quantifiable impact is seen. Heat waves do not strike victims immediately, but rather their cumulative effects slowly affect vulnerable populations and communities. Heat waves do not generally cause damage or elicit the immediate response of floods, fires, earthquakes, or other more "typical" disaster scenarios.

The NWS has in place a system to initiate alert procedures (advisories or warnings) when extreme heat is expected to have a significant impact on public safety. The expected severity of the heat determines whether advisories or warnings are issued. The NWS HeatRisk forecast provides a quick view of heat risk potential over the upcoming seven days. The heat risk is portrayed in a numeric (0-4) and color (green/yellow/orange/red/magenta) scale which is similar in approach to the Air Quality Index (AQI) or the UV Index. This can be seen in Section 4.2.2 of the Base Plan.

Past Occurrences

The City Planning Team noted that since extreme heat is a regional phenomenon, events that affected the County also affected the City. Those past occurrences were shown in the Base Plan in Section 4.2.2. The City has opened cooling stations just 1-2 times over the last 10 years.

From late spring through fall, it is not unusual for temperatures to exceed 90°F and higher. Provided by the Western Regional Climate Center, Table E-26 illustrates historical temperature patterns for Rocklin.

Table E-26 Rocklin Record High Temperatures and Days above 90 Degrees by Month

Month	Temperature (F)	Year	Number of Days >= 90°F
May	107°	1910	5.4
June	115°	1961	14.7
July	115°	1933	26.0
August	118°	1933	24.6
September	114°	1950	15.4
October	105°	1910	3.4
Totals			**89.5**

Source: Western Regional Climate Center

Vulnerability to and Impacts from Extreme Heat

The City experiences temperatures in excess of 100°F during the summer and fall months. The temperature moves to 105-115°F in rather extreme situations. During these times, drought conditions may worsen and

the City may see an increase in dry fuels. Also, PSPS events may occur during these times as well. Health issues are the primary concern with this hazard, although economic impacts can also be an issue.

The elderly and individuals below the poverty level are the most vulnerable to extreme temperatures. Nursing homes and elder care facilities are especially vulnerable to extreme heat events if power outages occur and air conditioning is not available. In addition, individuals below the poverty level may be at increased risk to extreme heat if use of air conditioning is not affordable. This is especially true of homeless people and the transient population.

Days of extreme heat have been known to result in medical emergencies, and unpredictable human behavior. Periods of extended heat and dryness (droughts) can have major economic, agricultural, and water resources impacts. Extreme heat can also dry out vegetations, making it more vulnerable to wildfire ignitions.

Future Development

Future development of new buildings in the City will likely not be affected by extreme heat. Extreme heat is more likely to affect vulnerable populations. Vulnerability to extreme heat will increase as the average age of the population in each City shifts. It is encouraged that nursing homes and elder care facilities have emergency plans or backup power to address power failure during times of extreme heat and in the event of a PSPS. Low income residents and homeless populations are also vulnerable. Cooling centers for these populations should be utilized when necessary. The City has a GIS Division which assists in the development of GIS-based mapping of pertinent information. This data can be used by all departments and agencies for emergency pre-planning and during emergency incidents.

Severe Weather: Freeze and Snow

Likelihood of Future Occurrence–Likely
Vulnerability–Medium

Hazard Profile and Problem Description

According to the NWS and the WRCC, winter snowstorms can include heavy snow, ice, and blizzard conditions. Heavy snow can immobilize a region, stranding commuters, stopping the flow of supplies, and disrupting emergency and medical services. Accumulations of snow can collapse roofs and knock down trees and power lines. In rural areas, homes and farms may be isolated for days, and unprotected livestock may be lost. The cost of snow removal, damage repair, and business losses can have a tremendous impact on cities and towns.

Heavy accumulations of ice can bring down trees, electrical wires, telephone poles and lines, and communication towers. Communications and power can be disrupted for days until the damage can be repaired. Power outages can have a significant impact on communities, especially critical facilities such as public utilities. Even small accumulations of ice may cause extreme hazards to motorists and pedestrians.

Some winter storms are accompanied by strong winds, creating blizzard conditions with blinding wind-driven snow, severe drifting, and dangerous wind chills. Strong winds accompanying these intense storms

and cold fronts can knock down trees, utility poles, and power lines. Blowing snow can reduce visibility to only a few feet in areas where there are no trees or buildings. Serious vehicle accidents with injuries and deaths can result. Freezing temperatures can cause significant damage to the agricultural industry.

Location and Extent

Freeze and snow are regional issues, meaning the entire City is at risk to cold weather and freeze events. While there is no scale (i.e. Richter, Enhanced Fujita) to measure the effects of freeze, the WRCC reports that in a typical year, minimum temperatures fall below 32°F on 22.6 days with 0 days falling below 0°F in western Placer County. Snowfall is measured in depths, and the WRCC reports that average snowfall on the western side of the County is 1.4 inches. Freeze and snow has a slow onset and can generally be predicted in advance for the County. Freeze events can last for hours (in a cold overnight), or for days to weeks at a time. Snow event can last for hours or days, but is more unlikely in the western portion of the County. When it does snow, the snow often melts relatively quickly.

Past Occurrences

There has been no federal and one state disaster declarations in the County for freeze and snow, as shown on Table E-27.

Table E-27 Placer County – State and Federal Disaster Declarations from Freeze and Snow 1950-2020

Disaster Type	State Declarations		Federal Declarations	
	Count	Years	Count	Years
Freeze	1	1972	0	–

Source: Cal OES, FEMA

Data for the following table were provided by the Rocklin Weather Station for the period of record from 1904 to 1976 illustrating historical temperature patterns in the Rocklin area. Table E-31 illustrates historical temperatures in Rocklin.

Table E-28 Rocklin Record Low Temperatures and Days below Freezing by Month

Month	Temperature (F)	Year	Number of Days <= 32°F
January	14°	1937	12.7
February	20°	1929	6.7
March	23°	1944	3.6
April	27°	1929	1.0
May	19°	1928	0.1
October	25°	1917	0.7
November	20°	1921	5.6
December	14°	1932	12.1
Totals			**42.5**

Source: Western Regional Climate Center

The City noted that cold and freeze is a regional phenomenon; events that affected the County also affected the City. Those past occurrences were shown in the Base Plan in Section 4.3.3.

Vulnerability to and Impacts from Severe Weather: Freeze and Snow

The City experiences temperatures below 32 degrees during the winter months. Freeze can cause injury or loss of life to residents of the City. While it is rare for buildings to be affected directly by freeze, damages to pipes that feed building can be damaged during periods of extreme cold. Freeze and snow can occasionally be accompanied by high winds, which can cause downed trees and power lines, power outages, accidents, and road closures. Transportation networks, communications, and utilities infrastructure are the most vulnerable physical assets to impacts of severe winter weather in the County.

Future Development

Like extreme heat, vulnerability to freeze will increase as the average age of the population in the City shifts. The elderly and homeless are more at risk to the effects of freeze. The City has a GIS Division which assists in the development of GIS-based mapping of pertinent information. This data can be used by all departments and agencies for emergency pre-planning and during emergency incidents.

Severe Weather: Heavy Rains and Storms

Likelihood of Future Occurrence–Likely
Vulnerability–Medium

Hazard Profile and Problem Description

Storms in the City occur annually and are generally characterized by heavy rain often accompanied by strong winds and sometimes lightning and hail. Approximately 10 percent of the thunderstorms that occur each year in the United States are classified as severe. A thunderstorm is classified as severe when it contains one or more of the following phenomena: hail that is three-quarters of an inch or greater, winds in excess of 50 knots (57.5 mph), or a tornado. Heavy precipitation in the City falls mainly in the fall, winter, and spring months. Wind often accompanies these storms; hail and lightning are rare in the City.

Location and Extent

Heavy rain events occur on a regional basis. Rains and storms can occur in any location of the City. All portions of the City are at risk to heavy rains. Most of the severe rains occur during the fall, winter, and spring months. There is no scale by which heavy rains and severe storms are measured. Magnitude of storms is measured often in rainfall and damages. The speed of onset of heavy rains can be short, but accurate weather prediction mechanisms often let the public know of upcoming events. Hail and lightning are rare in the City and Placer County. Duration of severe storms in California, Placer County, and the City can range from minutes to hours to days. Information on precipitation extremes can be found in Section 4.2.3 of the Base Plan.

Past Occurrences

According to historical hazard data, severe weather, including heavy rains and storms, is an annual occurrence in the City. This is the cause of many of the federal disaster declarations related to flooding. The City noted no past occurrences since 2016.

Vulnerability to and Impacts from Heavy Rain and Storms

Heavy rain and severe storms are the most frequent type of severe weather occurrences in the City. These events can cause significant and localized flooding. Elongated events, or events that occur during times where the ground is already saturated can cause 1% and 0.2% annual chance flooding. Wind often accompanies these storms and has caused damage in the past. Hail and lightning are rare in the City, but also can cause damage, with lightning occasionally igniting wildfires. In the City localized flooding and tree damage/trees falling are impacts of concern.

Actual damage associated with the effects of severe weather include impacts to property, critical facilities (such as utilities), and life safety. Heavy rains and storms often result in flooding creating significant issues. Roads can become impassable and ground saturation can result in instability, collapse, or other damage to trees, structures, roadways and other critical infrastructure. Floodwaters and downed trees can break utilities and interrupt services.

Future Development

Building codes in the City ensure that new development is built to current building standards, which should reduce the risk to future development in the City from heavy rains and storms. New critical facilities such as communications towers and others should be built to withstand hail damage, lightning, and thunderstorm winds. With adherence to development standards, future losses to new development should be minimal.

Wildfire

Likelihood of Future Occurrence–Highly Likely
Vulnerability–Medium

Hazard Profile and Problem Description

Wildland fire and the risk of a conflagration is an ongoing concern for the City of Rocklin. Throughout California, communities are increasingly concerned about wildfire safety as increased development in the foothills and mountain areas and subsequent fire control practices have affected the natural cycle of the ecosystem. Wildland fires affect grass, forest, and brushlands, as well as any structures located within them. Where there is human access to wildland areas the risk of fire increases due to a greater chance for human carelessness and historical fire management practices. Historically, the fire season extends from early spring through late fall of each year during the hotter, dryer months; however, in recent years, the risk of wildfire has become a year around concern. Fire conditions arise from a combination of high temperatures, low moisture content in the air and fuel, accumulation of vegetation, and high winds. These high winds can result in red flag days, and can result in PSPS events in the City. While wildfire risk has

predominantly been associated with more remote forested areas and wildland urban interface (WUI) areas, significant wildfires can also occur in more populated, urban areas.

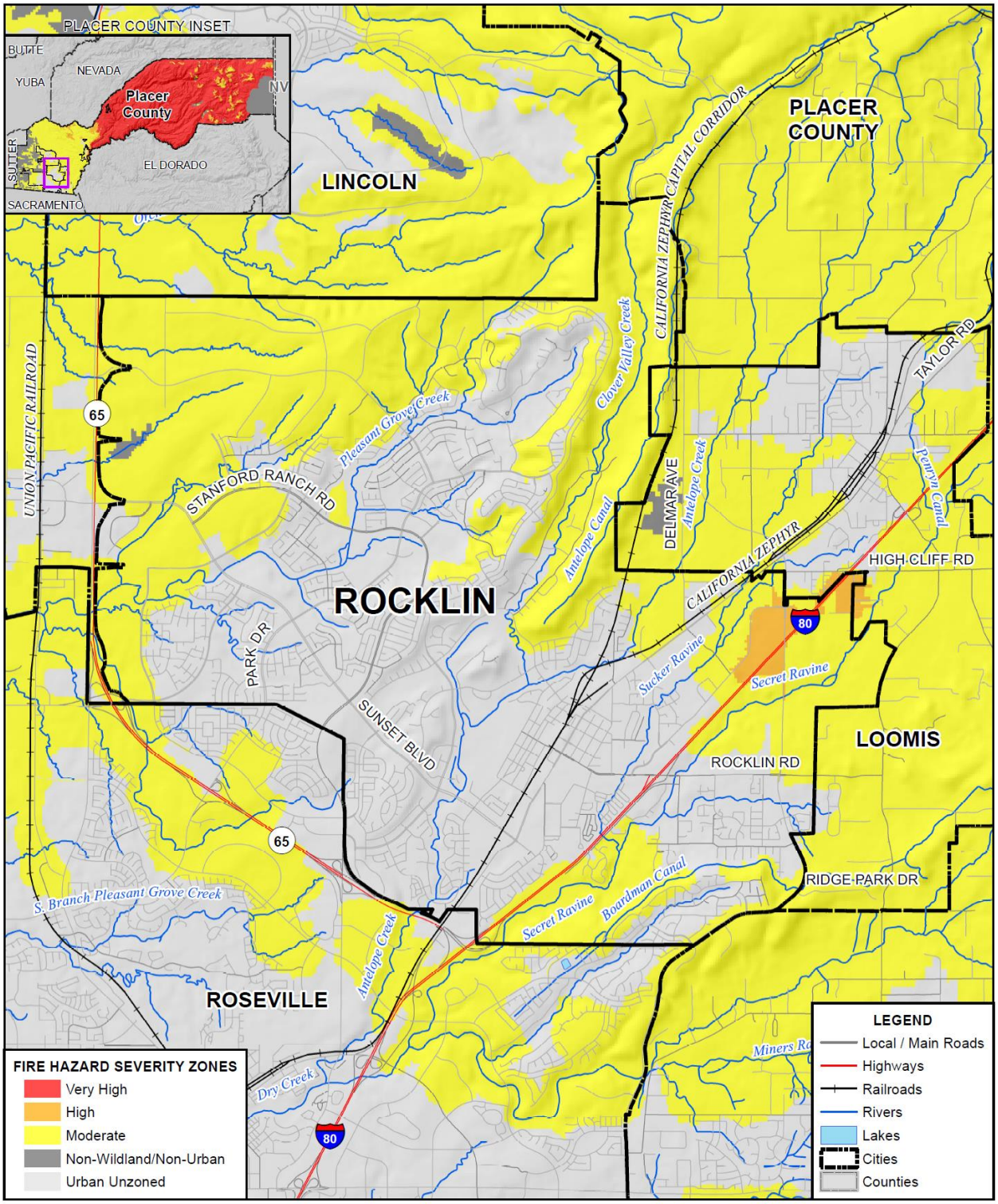
Location and Extent

Wildfire can affect all areas of the City. According to the Community Safety Element of Rocklin's General Plan, while the major fire threat in the city is related to urban development, annexations in recent decades incorporated large areas of grassland subject to wildfire. These areas include Clover Valley Lakes, the southern end of China Garden Road, portions of Whitney Oaks, the Croftwood/Dias Lane area, the Sunset Ranchos and various open-space easements and recreational properties.

CAL FIRE has estimated that the risk varies across the City and has created maps showing risk variance. Following the methodology described in Section 4.3.19 of the Base Plan, wildfire maps for the City of Rocklin were created. Figure E-7 shows the CAL FIRE FHSZ in the City. As shown on the maps, fire hazard severity zones within the City range from urban unzoned to high.

The Planning Team for the City noted that the large orange area (High Risk) located to the north of I-80 and to the east of Sierra College Boulevard has now been mostly developed with shopping centers. Updated mapping may not deem this a high risk area.

Figure E-7 City of Rocklin – Fire Hazard Severity Zones



Data Source: Cal-Fire (Draft 09/2007 - c31fhszl06_1, Adopted 11/2007 - fhszs06_3_31, Recommended 12/2008 - c31fhszl06_3), Placer County GIS, Cal-Atlas, NVBLM; Map Date: 2021.

Wildfires tend to be measured in structure damages, injuries, and loss of life as well as on acres burned. Fires can have a quick speed of onset, especially during periods of drought or during hot dry summer months. Fires can burn for a short period of time, or may have durations lasting for a week or more. Geographical FHSZ extent from CAL FIRE is shown in Table E-29.

Table E-29 City of Rocklin – Geographical FHSZ Extents

Fire Hazard Severity Zone	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Very High	0	0.00%	0	0.00%	0	0.00%
High	160	1.3%	64	1.1%	96	1.4%
Moderate	5,799	46.3%	1,922	33.5%	3,877	57.2%
Non-Wildland/non-Urban	18	0.1%	1	0.0%	17	0.3%
Urban Unzoned	6,547	52.3%	3,757	65.4%	2,790	41.1%
Total	**12,524**	**100.0%**	**5,743**	**100.0%**	**6,781**	**100.0%**

Source: CAL FIRE

Past Occurrences

There has been six state and five federal disaster declaration due to wildfire, as shown in Table E-30.

Table E-30 Placer County – State and Federal Wildfire Disaster Declarations 1950-2020

Disaster Type	Federal Declarations		State Declarations	
	Count	Years	Count	Years
Fire	5	1961, 1965, 1973, 1987, 2010	6	2002, 2004, 2008, 2009, 2014 (twice)

Source: Cal OES, FEMA

The City of Rocklin has been impacted by drift smoke generated by fires in Northern California. These fires reduce air quality within the city, affecting the elderly population and citizens with underlying respiratory illness. Poor air quality from regional fires affects outdoor activities such as team sports, maintenance provided by city workers, and special events (e.g., concerts, celebrations, etc.). In 2020, the City purchased air purification units for some city facilities due the poor air quality caused by fires in Butte, Yolo, Solano, and Napa counties.

Vulnerability to and Impacts from Wildfire

The wildfire hazard is one of the highest priority hazards in the County and City, and is the hazard with the greatest potential for catastrophic loss. High fuel loads in the County and Cities, along with geographical and topographical features, create the potential for both natural and human-caused fires that can result in loss of life and property. These factors, combined with natural weather conditions common to the area, including periods of drought, high temperatures, low relative humidity, and periodic winds, can result in

frequent and sometimes catastrophic fires. The more urbanized areas within the County are not immune from fire. The dry vegetation and hot and sometimes windy weather, combined with continued growth in the WUI areas, results in an increase in the number of ignitions. Any fire, once ignited, has the potential to quickly become a large, out-of-control fire. As development continues throughout the County and City, especially in these interface areas, the risk and vulnerability to wildfires will likely increase.

Rocklin is not immune to numerous types of grass and brush fires and any one of them may accelerate into an urban interface wildfire. Such a situation could lead to evacuation of large portions of the population and the potential for significant loss of personal property, structures, and rangeland. The natural fuels available in or near the City vary greatly in the rate and intensity of burning. Fires in heavy brush and stands of trees burn with great intensity but more slowly than in dry grass and leaves. Dense fuels will propagate fire better than sparse fuels.

Potential impacts from wildfire include loss of life and injuries; damage to structures and other improvements, natural and cultural resources, croplands, and timber; and loss of recreational opportunities. Wildfires can cause short-term and long-term disruption to the City. Fires can have devastating effects on watersheds through loss of vegetation and soil erosion, which may impact the City by changing runoff patterns, increasing sedimentation, reducing natural and reservoir water storage capacity, and degrading water quality. Fires can also affect air quality in the City; smoke and air pollution from wildfires can be a severe health hazard.

Although the physical damages and casualties arising from wildland-urban interface fires may be severe, it is important to recognize that they also cause significant economic impacts by resulting in a loss of function of buildings and infrastructure. Economic impacts of loss of transportation and utility services may include traffic delays/detours from road and bridge closures and loss of electric power, potable water, and wastewater services. Schools and businesses can be forced to close for extended periods of time. Recently, the threat of wildfire, combined with the potential for high winds, heat, and low humidity, has caused PG&E to initiate a PSPS which can also significantly impact a community through loss of services, business closures, and other impacts associated with loss of power for an extended period. In addition, catastrophic wildfire can create favorable conditions for other hazards such as flooding, landslides, and erosion during the rainy season.

Assets at Risk

Based on the vulnerability of Rocklin to the wildfire hazard, the sections that follow describes significant assets at risk in the City of Rocklin. This section includes the values at risk, population at risk, and critical facilities at risk.

Values at Risk

GIS was used to determine the possible impacts of wildfire within the City of Rocklin. The methodology described in Section 4.3.19 of the Base Plan was followed in determining structures and values at risk in fire hazard severity zones. Summary analysis results for Rocklin are shown in Table E-31, which summarizes total parcel counts, improved parcel counts and their structure values by fire hazard severity zone.

Table E-31 City of Rocklin – Count and Value of Parcels by Fire Hazard Severity Zone

Fire Hazard Severity Zone	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
High	80	52	$29,058,654	$77,794,570	$71,806,255	$178,659,479
Moderate	8,160	6,686	$1,199,256,172	$3,194,734,621	$1,928,183,688	$6,322,174,481
Non-Wildland/Non-Urban	4	0	$2,638,707	$0	$0	$2,638,707
Urban Unzoned	15,413	14,271	$1,874,753,579	$4,894,644,083	$2,840,162,092	$9,609,559,754
Rocklin Total	**23,657**	**21,009**	**$3,105,707,112**	**$8,167,173,274**	**$4,840,152,035**	**$16,113,032,421**

Source: Placer County 2020 Parcel/Assessor's Data, CAL FIRE

Table E-32 breaks out the Table E-31 by adding the property use details by fire hazard severity zone for the City.

Table E-32 City of Rocklin – Count and Value of Parcels by Fire Hazard Severity Zone and Property Use

Fire Hazard Severity Zone / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
High						
Agricultural	0	0	$0	$0	$0	$0
Commercial	42	23	$24,096,489	$65,817,945	$65,817,945	$155,732,379
Industrial	0	0	$0	$0	$0	$0
Institutional	0	0	$0	$0	$0	$0
Miscellaneous	6	0	$598,946	$0	$0	$598,946
Natural / Open Space	3	0	$0	$0	$0	$0
Residential	29	29	$4,363,219	$11,976,625	$5,988,310	$22,328,154
High Total	**80**	**52**	**$29,058,654**	**$77,794,570**	**$71,806,255**	**$178,659,479**
Moderate						
Agricultural	5	0	$2,215,610	$0	$0	$2,215,610
Commercial	208	133	$200,216,725	$381,254,314	$381,254,314	$962,725,353
Industrial	75	57	$37,565,207	$74,385,108	$111,577,662	$223,527,977
Institutional	26	14	$20,973,316	$124,835,430	$124,835,430	$270,644,176
Miscellaneous	502	15	$44,983,404	$6,498,240	$6,498,240	$57,979,884
Natural / Open Space	364	2	$399,654	$274,533	$274,533	$948,720
Residential	6,980	6,465	$892,902,256	$2,607,486,996	$1,303,743,509	$4,804,132,761
Moderate Total	**8,160**	**6,686**	**$1,199,256,172**	**$3,194,734,621**	**$1,928,183,688**	**$6,322,174,481**
Non-Wildland/Non-Urban						

Fire Hazard Severity Zone / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Agricultural	0	0	$0	$0	$0	$0
Commercial	0	0	$0	$0	$0	$0
Industrial	1	0	$2,638,707	$0	$0	$2,638,707
Institutional	0	0	$0	$0	$0	$0
Miscellaneous	2	0	$0	$0	$0	$0
Natural / Open Space	1	0	$0	$0	$0	$0
Residential	0	0	$0	$0	$0	$0
Non-Wildland/Non-Urban Total	**4**	**0**	**$2,638,707**	**$0**	**$0**	**$2,638,707**
Urban Unzoned						
Agricultural	0	0	$0	$0	$0	$0
Commercial	445	328	$214,154,997	$439,559,874	$439,559,874	$1,093,274,745
Industrial	122	97	$48,850,292	$120,881,377	$181,322,071	$351,053,740
Institutional	60	27	$23,629,039	$94,748,629	$94,748,629	$213,126,297
Miscellaneous	561	5	$8,661,207	$793,889	$793,889	$10,248,985
Natural / Open Space	272	3	$2,468,705	$8,814,715	$8,814,715	$20,098,135
Residential	13,953	13,811	$1,576,989,339	$4,229,845,599	$2,114,922,914	$7,921,757,852
Urban Unzoned Total	**15,413**	**14,271**	**$1,874,753,579**	**$4,894,644,083**	**$2,840,162,092**	**$9,609,559,754**
Rocklin Total	**23,657**	**21,009**	**$3,105,707,112**	**$8,167,173,274**	**$4,840,152,035**	**$16,113,032,421**

Source: Placer County 2020 Parcel/Assessor's Data, CAL FIRE

Population at Risk

The FHSZ dataset was overlayed on the parcel layer. Those residential parcel centroids that intersect the FHSZs were counted and multiplied by the 2010 Census Bureau average household factors for the City of Rocklin – 2.68. According to this analysis, there is a total population of 17,404 residents of Rocklin at risk to moderate or higher FHSZs. This is shown in Table E-33.

Table E-33 City of Rocklin – Count of Improved Residential Parcels and Population by Fire Hazard Severity Zone

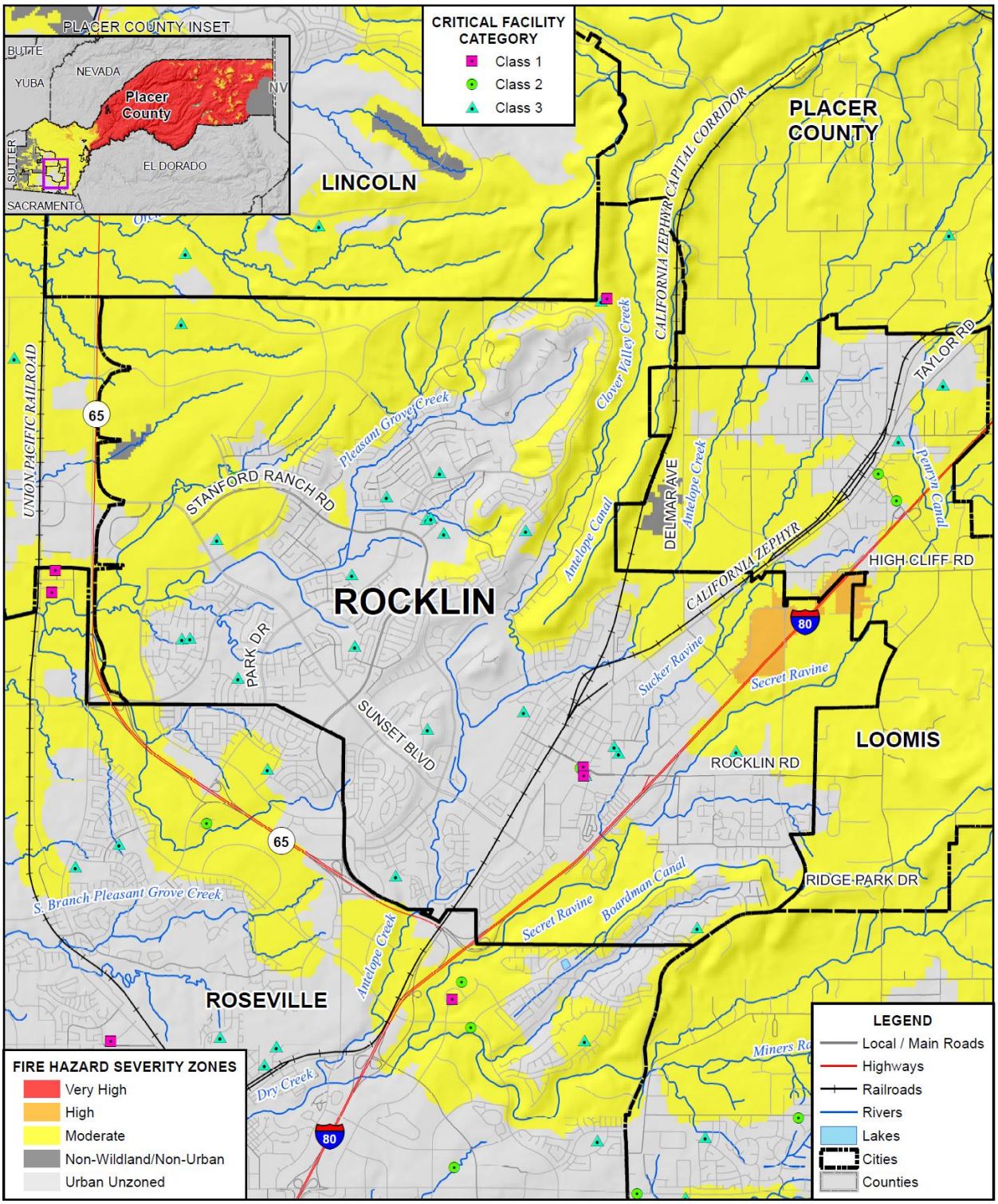
Jurisdiction	Very High		High		Moderate	
	Improved Residential Parcels	Population at Risk	Improved Residential Parcels	Population at Risk	Improved Residential Parcels	Population at Risk
Rocklin	0	0	29	78	6,465	17,326

Source: Placer County 2020 Parcel/Assessor's Data, CAL FIRE

Critical Facilities at Risk

An analysis was performed on the critical facility inventory in Rocklin in identified FHSZs. Critical facilities in a FHSZ in the City of Rocklin are shown in Figure E-8 and detailed in Table E-34. Details of critical facility definition, type, name and address and jurisdiction by fire hazard severity zone are listed in Appendix F.

Figure E-8 City of Rocklin – Critical Facilities in Fire Hazard Severity Zones



FOSTER MORRISON CONSULTING

COUNTY OF Placer

Data Source: Cal-Fire (Draft 09/2007 - c31fhszl06_1, Adopted 11/2007 - fhszs06_3_31, Recommended 12/2008 - c31fhszl06_3), Placer County GIS, Cal-Atlas, NVBLM; Map Date: 2021.

Table E-34 City of Rocklin – Critical Facilities by Fire Hazard Severity Zone

Fire Hazard Severity Zone	Critical Facility Class	Critical Facility Type	Facility Count
Moderate	Class 1	Communication Transmission Sites	1
	Class 2	Fire Station	1
	Class 3	School	1
		Water Treatment Plant	1
Moderate Total			**4**
Urban Unzoned	Class 1	Dispatch Center	1
		Emergency Operation Center	1
	Class 2	Fire Station	2
		Police Station	1
	Class 3	Hall	2
		Hazardous Materials Facility	1
		School	18
Urban Unzoned Total			**26**
Rocklin Total			**30**

Source: CAL FIRE, Placer County

Future Development

Because the City of Rocklin is surrounded by other jurisdictions on all sides, it is likely that the City boundaries will not expand beyond their current locations. The primary hazard in these undeveloped areas is wildland fires, as the areas contain extensive grasslands and oak woodlands. As these areas develop the majority of the grasslands and oak woodlands will be replaced with urban development and some of the current wildland hazards will be mitigated as a result of the development, but the development will also include the preservation of grassland and oak woodland areas that will create an urban/wildland fire hazard interface. City building codes are in effect and should continue to be updated as appropriate to reduce this risk.

GIS Analysis

PLACE

E.6 Capability Assessment

Capabilities are the programs and policies currently in use to reduce hazard impacts or that could be used to implement hazard mitigation activities. This capabilities assessment is divided into five sections: regulatory mitigation capabilities, administrative and technical mitigation capabilities, fiscal mitigation capabilities, mitigation education, outreach, and partnerships, and other mitigation efforts.

E.6.1. Regulatory Mitigation Capabilities

Table E-35 lists regulatory mitigation capabilities, including planning and land management tools, typically used by local jurisdictions to implement hazard mitigation activities and indicates those that are in place in the City of Rocklin. MAKE SURE TO FILL OUT THE LAST CELL – FEMA WON'T PASS THE PLAN WITHOUT IT!

Table E-35 City of Rocklin Regulatory Mitigation Capabilities

Plans	Y/N Year	Does the plan/program address hazards? Does the plan identify projects to include in the mitigation strategy? Can the plan be used to implement mitigation actions?
Comprehensive/Master Plan/General Plan	Y	2012 City of Rocklin General Plan Update contains a Community Safety Element which addresses hazards through goals and policies but it does not identify specific projects. The Community Safety Element can be used to support mitigation actions provided they are consistent with the goals and policies. LHMP adopted and amended to General Plan in 2016.
Capital Improvements Plan	Y	Capital Improvement Plan last updated in 2020. The Plan identifies capital improvement projects such as street and roadway improvements but does not directly address hazards, although some projects when built will indirectly address hazards.
Economic Development Plan	Y	The Rocklin City Council includes a Strategic Plan as part of its annual budget adoption process, but it does not specifically address hazards or mitigation actions.
Local Emergency Operations Plan	Y	Emergency Operations Plan last updated in 2014. Addresses planned response to emergencies associated with disasters, technological incidents or other dangerous conditions created either by man or nature but does not identify specific mitigation projects.
Continuity of Operations Plan	Y	See Local Emergency Operations Plan above.
Transportation Plan	Y	See Capital Improvement Plan above.
Stormwater Management Plan/Program	Y	Conditions listed in City's standard improvement requirements and standard list of conditions.
Engineering Studies for Streams	Y	Hydraulic analyses are required for new development projects
Community Wildfire Protection Plan	Y	Wildfire hazards included in City's Emergency Operations Plan
Other special plans (e.g., brownfields redevelopment, disaster recovery, coastal zone management, climate change adaptation)	N	
Building Code, Permitting, and Inspections	**Y/N**	**Are codes adequately enforced?**
Building Code	Y	Version/Year: 2019 CBC. The building code is adequately enforced.
Building Code Effectiveness Grading Schedule (BCEGS) Score	N	Score:
Fire department ISO rating:	Y	Rating: 2

Site plan review requirements	Y	Required prior to issuance of engineering, building, or planning permits. This is adequately enforced.
Land Use Planning and Ordinances	**Y/N**	**Is the ordinance an effective measure for reducing hazard impacts? Is the ordinance adequately administered and enforced?**
Zoning ordinance	Y	Indirectly reduces hazard impacts through building setback, size and height requirements as well as lot coverage requirements. Adequately administered and enforced.
Subdivision ordinance	Y	Indirectly reduces hazard impacts through policies, standards, requirements and procedures that regulate the design and improvement of all subdivisions. Adequately administered and enforced.
Floodplain ordinance	Y	Reduces flooding hazards by applying regulations throughout the City for development within or near flood prone areas. Adequately administered and enforced.
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	N	
Flood insurance rate maps	Y	FEMA flood insurance rate maps (FIRM) are applicable and are an effective measure for reducing hazard impacts. Adequately administered and enforced.
Elevation Certificates	Y	Obtained by private property owners, does not directly reduce hazard impacts. Adequately administered and enforced.
Acquisition of land for open space and public recreation uses	Y	Open space and recreation uses identified in City's General Plan and created as part of development review process, assists in reduction of hazard impacts by preserving lands that may contain hazards. Adequately administered and enforced.
Erosion or sediment control program	Y	Erosion and Sediment Control Ordinance adopted, reduces hazard impacts related to water quality. Adequately administered and enforced.
Other		
How can these capabilities be expanded and improved to reduce risk?		
PROVIDE SPECIFIC DETAILS OF AREAS FOR IMPROVEMENT OF THESE TYPES OF CAPABILITIES AND HOW/WHY IT WILL HELP THE CITY		

Source: City of Rocklin

As indicated above, the City has several programs, plans, policies, codes and ordinances in place and/or that they follow. The General Plan for the City of Rocklin is the most comprehensive. The following section provides an overview of the General Plan and identifies specific policies related to hazard mitigation that are included in the plan

The City of Rocklin General Plan (2012 General Plan Update)

The City of Rocklin General Plan provides a vision for the future of the City. The plan discusses existing conditions and creates a framework of policies that encourage progress toward the agreed upon goals for the community.

The general plan includes a Community Safety Element that focuses on potential natural and human-created hazards. It describes activities and services that provide protection from these hazards and considers the

potential impact of hazards to present and future development of the Rocklin Planning Area. Identified hazards include: geologic hazards, seismic safety, flood hazards, hazardous materials handling, emergency preparedness, and fire hazards. The action plan component of the Summary of Goals & Policies & Action Plan section of the Rocklin General Plan (October 2012) has been incorporated into the final version of the General Plan. Public safety and mitigation-related policies from the General Plan that have been developed are presented below in Table E-36 and Table E-37.

Table E-36 Rocklin General Plan Community Safety Element Goals and Policies

Safety Element Goals & Policies	
Goal for Community Safety	To minimize danger from hazards and to protect residents and visitors from earthquake, fire, flood, other natural disasters, and human-created hazards such as train derailment, industrial accidents, acts of war or terrorism, and accidental release of harmful materials. LHMP adopted into General Plan in 2016.
General Policies	
S-1	Require engineering analysis of new development proposals in areas with possible soil instability, flooding, earthquake faults, or other hazards, and to prohibit development that cannot mitigate the applicable hazard.
S-2	Maintain a City Emergency Operations Plan, to include the National Incident Management System (N.I.M.S.).
S-3	Coordinate with local and State Emergency Management agencies utilizing the Standardized Emergency Management System (S.E.M.S.) and National Incident Management System (N.I.M.S.) in order to facilitate multi-agency emergency response.
S-4	Identify in the Emergency Operations Plan evacuation routes and shelter locations for use in case of disasters or emergencies.
S-5	Maintain appropriate standards for minimum road widths and turnarounds.
S-6	Coordinate with State and Federal agencies regarding homeland security, recognizing the City's role as first responder to local incidents.
Flooding Policies	
S-7	Consult with the Placer County Flood Control and Water Conservation District and other appropriate entities regarding regional approaches for the planning, construction, operation and maintenance of drainage and flood control facilities.
S-8	Maintain and implement the City's Ordinance regarding "Flood Hazard Areas."
S-9	Ensure that the City's Regulatory Floodplain, based upon the most current information, both upstream and downstream, and is not adversely affected by new development.
S-10	Require that new development detain on-site drainage such that the rate of runoff flow is maintained at pre-development levels, except where detention is not recommended in plans and policies adopted by the Placer County Flood Control and Water Conservation District (PCFCWCD), and to require coordination with other projects' master plans to ensure no adverse cumulative effects. In lieu of detention, the City may require retention and/or off-site drainage improvements that are more beneficial to the community's overall drainage system.
S-11	Ensure that new development does not result in on-site flooding or increase flooding of off-site properties.
S-12	Require new development to annex into an existing drainage maintenance district where warranted.
Hazardous Materials/Contaminated Sites Policies	

Safety Element Goals & Policies	
S-13	Require existing and new commercial and industrial uses involving the use, handling, transport or disposal of hazardous materials within the City to disclose their activities in accordance with Placer County guidelines and the requirements of State law.
S-14	Require that construction activities cease if contamination is discovered on construction projects until the contamination is reported, and its extent is assessed, delineated, and isolated, as appropriate. Remediation shall occur to the satisfaction of the appropriate responsible agency (such as the Placer County Environmental Health Services, the Central Valley Regional Water Quality Control Board, the Department of Toxic Substances Control, or the City of Rocklin, depending on the type of contamination).
S-15	Require site-specific hazard investigations to be conducted, if determined to be necessary by the City, to confirm potentially contaminated soils prior to approval of new discretionary development projects.
Fire Hazards Policies	
S-16	Require new development and projects proposing land use changes to annex into existing or new Community Facilities Districts for fire prevention/suppression and medical response, or to create other financing mechanisms as necessary.
S-17	Require substantially vacant newly annexed areas containing wildland fire potential to bear additional costs associated with contracting to CalFire for fire suppression or provide other means of mitigation approved by the Fire Department until such time as urban services become available.
S-18	Incorporate fuel modification/fire hazard reduction planning (e.g., weed abatement, open space management plans, firebreaks, planting restrictions) on lands (both public and private) that contain terrain and vegetative features such as grass, woodlands and severe slopes
S-19	Maintain inter-jurisdictional cooperation and coordination, including automatic aid agreements with fire protection/suppression agencies in Placer County.
Seismic and Geologic Hazards Policies	
S-20	Provide for seismic safety and structural integrity in residential, commercial, industrial and public facilities through Building Code enforcement.
S-21	Require site-specific geotechnical studies of development proposals in areas subject to landslide potential, erosion, and/or slope instability.
Other Hazards Policies S-22 Require a risk analysis, as appropriate, when reviewing new projects located in close proximity to bulk hazardous material facilities, bulk petroleum transmission pipelines, and railroad travel routes. S-23 Require quarry safety protection measures prior to the development of any property containing or bordering on an existing quarry. The quarry safety protection measures shall identify public safety hazards associated with quarries and shall specify the protection methods that will be implemented to ensure public safety. S-24 Reduce the exposure of sensitive receptors to potential health risks from toxic air contaminants (TACs).	

Source: Rocklin Draft General Plan Update, Chapter 4D – Community Safety Element

Table E-37 Rocklin General Plan Mitigation Related Policies (Various Elements)

General Plan: Various Elements Goals & Policies	
Land Use Policies	
LU-19	Require projects that are approved on severe slopes (25 percent or greater) to establish grading design guidelines with their development application.
Conservation, Development, and Utilization of Natural Resources Policies	

General Plan: Various Elements Goals & Policies	
OCR-46	Participate as appropriate in a regional approach to the management of drainage basins and flood plains with regional agencies such as the Placer County Flood Control and Water Conservation District.
OCR-47	Protect the designated City Regulatory Floodplains from encroachment by development that would impede flood flows or pose a hazard to occupants.
OCR-49	Minimize the degradation of water quality through use of erosion control plans and Best Management Practices.
OCR-50	Maintain a grading ordinance that minimizes erosion and siltation of creeks and other watercourses.
OCR-51	Evaluate development along stream channels to ensure that it does not create any of the following effects in a significant manner: reduced stream capacity, increased erosion or deterioration of the channel.
OCR-60	Work with the Placer County Water Agency to ensure that available methods and techniques to conserve potable water supplies are applied in Rocklin.
Public Facilities and Services Policies (Law Enforcement, Fire Protection, and Emergency Response)	
PF-12	Identify certain types of development, such as assisted living facilities and group homes that may generate higher demand or special needs for emergency services and require developer participation to mitigate the needs/demands.
PF-15	Require City-approved automated entry access to gated communities for emergency vehicles
PF-23	Require special fire suppression mitigation (such as sprinklering) for any new residential development located more than two road miles from a fire station and for any new commercial development located more than one and one-half road miles from a fire station.
PF-24	Support public education concerning fire and life safety.
PF-25	Require new development to meet fire flow requirements based on standards codified in the Uniform Fire Code.
Public Facilities and Services Policies (Utilities)	
PF-32	Request utility companies to expedite undergrounding of existing above ground utility lines.
PF-33	Require undergrounding of utility lines in new development, except where infeasible for financial and/or operational reasons.
PF-34	Coordinate with utility companies regarding the location of new high voltage transmission lines, seeking undergrounding wherever possible.
PF-41	Assist the Placer County Water Agency in implementing water conservation practices.
PF-43	Require that new development proposals include Drainage Master Plans unless waived by the City Engineer.
PF-44	Acquire easements to creeks and waterways to allow for maintenance, inspection, and construction of storm drainage facilities.

Source: 2012 City of Rocklin General Plan

City of Rocklin Emergency Operations Plan

The City of Rocklin Emergency Operations Plan (EOP) and Resources Guide addresses the planned response for the City of Rocklin to emergencies associated with disasters, technological incidents, or other dangerous conditions created by either man or nature. It provides an overview of operational concepts,

identifies components of the City emergency management organization, and describes the overall responsibilities of local, state, and federal entities.

E.6.2. Administrative/Technical Mitigation Capabilities

Table E-38 identifies the City department(s) responsible for activities related to mitigation and loss prevention in Rocklin. MAKE SURE TO FILL OUT THE LAST CELL – FEMA WON'T PASS THE PLAN WITHOUT IT!

Table E-38 City of Rocklin's Administrative and Technical Mitigation Capabilities

Administration	Y/N	Describe capability Is coordination effective?
Planning Commission	Y	Makes recommendations and/or final decisions on development proposals. Coordination is effective
Mitigation Planning Committee	N	
Maintenance programs to reduce risk (e.g., tree trimming, clearing drainage systems)	Y	Public Services Department conducts tree trimming, weed abatement/grazing and drainage channel maintenance activities. Coordination is effective.
Mutual aid agreements	Y	Rocklin Fire Department belongs to statewide mutual aid system. Coordination is effective.
Other		
Staff	**Y/N FT/PT**	**Is staffing adequate to enforce regulations? Is staff trained on hazards and mitigation? Is coordination between agencies and staff effective?**
Chief Building Official	Y FT	Through a combination of City staff and contracting with outside firms, staffing is adequate to enforce regulations and staff is trained on hazards and mitigation. Coordination between agencies and staff is effective.
Floodplain Administrator	Y FT	Economic and Community Development Department has Floodplain Administrator.
Emergency Manager	Y FT	Fire Chief or Police Chief as designated by City Manager. Staffing is adequate to enforce regulations and staff is trained on hazards and mitigation. Coordination between agencies and staff is effective.
Community Planner	Y FT	Planning staff in Economic and Community Development Department. Staffing is adequate to enforce regulations and staff is trained on hazards and mitigation. Coordination between agencies and staff is effective.
Civil Engineer	Y FT	Engineering staff in Economic and Community Development Department. Staffing is adequate to enforce regulations and staff is trained on hazards and mitigation. Coordination between agencies and staff is effective.
GIS Coordinator	Y	GIS Division in Information Technology Division. Staffing is adequate to enforce regulations and staff is trained on hazards and mitigation. Coordination between agencies and staff is effective.
Other		

Technical		
Warning systems/services (Reverse 911, outdoor warning signals)	Y	Police and Fire Departments
Hazard data and information	Y	Police, Fire, Economic and Community Development and Public Services Departments.
Grant writing	N	
Hazus analysis	N	
Other		
How can these capabilities be expanded and improved to reduce risk?		
PROVIDE SPECIFIC DETAILS OF AREAS FOR IMPROVEMENT OF THESE TYPES OF CAPABILITIES AND HOW/WHY IT WILL HELP THE CITY		

Source: City of Rocklin

E.6.3. Fiscal Mitigation Capabilities

Table E-39 identifies financial tools or resources that the City could potentially use to help fund mitigation activities. MAKE SURE TO FILL OUT THE LAST CELL – FEMA WON'T PASS THE PLAN WITHOUT IT!

Table E-39 City of Rocklin's Fiscal Mitigation Capabilities

Funding Resource	Access/ Eligibility (Y/N)	Has the funding resource been used in past and for what type of activities? Could the resource be used to fund future mitigation actions?
Capital improvements project funding	Y	Has not been used in past for direct hazard mitigation activities, could be used to fund future mitigation actions.
Authority to levy taxes for specific purposes	Y (requires 2/3 voter approval)	Has not been used in past for direct hazard mitigation activities, could be used to fund future mitigation actions.
Fees for water, sewer, gas, or electric services	N	Water, sewer, gas and electric services in Rocklin are provided by others (non-City).
Impact fees for new development	Y	Has not been used in past for direct hazard mitigation activities, could be used to fund future mitigation actions.
Storm water utility fee	N	
Incur debt through general obligation bonds and/or special tax bonds	Y	Has not been used in past for direct hazard mitigation activities, could be used to fund future mitigation actions.
Incur debt through private activities	N	
Community Development Block Grant	Y	Has not been used in past for direct hazard mitigation activities, could be used to fund future mitigation actions.
Other federal funding programs	Y	Has not been used in past for direct hazard mitigation activities, could be used to fund future mitigation actions.

Funding Resource	Access/ Eligibility (Y/N)	Has the funding resource been used in past and for what type of activities? Could the resource be used to fund future mitigation actions?
State funding programs	Y	Has not been used in past for direct hazard mitigation activities, could be used to fund future mitigation actions.
Other		
How can these capabilities be expanded and improved to reduce risk?		
PROVIDE SPECIFIC DETAILS OF AREAS FOR IMPROVEMENT OF THESE TYPES OF CAPABILITIES AND HOW/WHY IT WILL HELP THE CITY		

Source: City of Rocklin

E.6.4. Mitigation Education, Outreach, and Partnerships

Table E-40 identifies education and outreach programs and methods already in place that could be/or are used to implement mitigation activities and communicate hazard-related information. MAKE SURE TO FILL OUT THE LAST CELL – FEMA WON'T PASS THE PLAN WITHOUT IT!

Table E-40 City of Rocklin's Mitigation Education, Outreach, and Partnerships

Program/Organization	Yes/No	Describe program/organization and how relates to disaster resilience and mitigation. Could the program/organization help implement future mitigation activities?
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	Y	Local citizen groups and non-profit organizations focused on environmental protection are active in Rocklin and region, but rarely focus on disaster mitigation. City could seek their assistance in helping to implement future mitigation activities.
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Y	The City staffs an environmental education outreach booth at some special events, could assist with implementing future mitigation activities.
Natural disaster or safety related school programs	N	
StormReady certification	N	
Firewise Communities certification	N?	
Public-private partnership initiatives addressing disaster-related issues	N	
Other		
How can these capabilities be expanded and improved to reduce risk?		
PROVIDE SPECIFIC DETAILS OF AREAS FOR IMPROVEMENT OF THESE TYPES OF CAPABILITIES AND HOW/WHY IT WILL HELP THE CITY		

Source: City of Rocklin

E.6.5. Other Mitigation Efforts

The City has many other completed or ongoing mitigation projects/efforts that include the following:

The City of Rocklin has many other ongoing mitigation efforts that include the following:

- Weed Abatement Program
- Annual Drainage Maintenance Program
- Managed Grazing Program (see Figure E-9)

Figure E-9 Managed Grazing Program

Source: City of Rocklin

- The Public Services Department is responsible for all storm drain maintenance in the City of Rocklin including:
  - ✓ Pipe cleaning and replacement
  - ✓ Catch basin cleaning & repair
  - ✓ Ditch cleaning & regrading
  - ✓ Inlet/outlet stabilization
  - ✓ Detention pond maintenance

E.7 Mitigation Strategy

E.7.1. Mitigation Goals and Objectives

The City of Rocklin adopts the hazard mitigation goals and objectives developed by the HMPC and described in Chapter 5 Mitigation Strategy.

E.7.2. NFIP Mitigation Strategy

The City of Rocklin joined the National Flood Insurance Program (NFIP) on May 15, 1984. As a participant of the NFIP, the City of Rocklin has administered floodplain management regulations that meet the minimum requirements of the NFIP. The management program objective is to protect people and property

within the City. The City of Rocklin will continue to comply with the requirements of the NFIP in the future.

In addition, the City of Rocklin actively participates with the County of Placer to address local NFIP issues through a regional approach. Many of the program activities are the same for the City of Rocklin as for Placer County since participation at the County level includes all local jurisdictions. An elected official of the City of Rocklin is a designated representative on the Placer County Flood Control District Board.

The City's regulatory activities apply to existing and new development areas of the City; implementing flood protection measures for existing structures and new development and maintaining drainage systems. The goal of the program is to enhance public safety, and reduce impacts and losses while protecting the environment. The City has a Flood Damage Prevention Ordinance that regulates construction in the floodplain. The City intends to continue to implement the ordinance and participate at the regional level with Placer County implementing appropriate measures to mitigate exposure and damages within designated flood prone areas.

The NFIP's Community Rating System (CRS) is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. As a result, flood insurance premium rates are discounted to reflect the reduced flood risk resulting from the community actions meeting the three goals of the CRS which are to reduce flood losses, facilitate accurate insurance rating, and promote the awareness of flood insurance. The City of Rocklin is not a current participant in the CRS program.

More information about the floodplain administration in the City of Rocklin can be found in Table E-41.

Table E-41 City of Rocklin Compliance with NFIP

NFIP Topic	Comments
Insurance Summary	
How many NFIP policies are in the community? What is the total premium and coverage?	145 policies $93,240 in premiums $47,806,200 in coverage
How many claims have been paid in the community? What is the total amount of paid claims? How many of the claims were for substantial damage?	26 paid losses $250,459.45 in losses paid 1 substantial damage claim
How many structures are exposed to flood risk within the community?	115 in 1% annual chance flood zone 40 in 0.2% annual chance flood zone
Repetitive Loss (RL) and Severe Repetitive Loss Properties (SRL)	4 RL properties 0 SRL properties
Describe any areas of flood risk with limited NFIP policy coverage	
Staff Resources	
Is the Community Floodplain Administrator or NFIP Coordinator certified?	
Provide an explanation of NFIP administration services (e.g., permit review, GIS, education or outreach, inspections, engineering capability)	

NFIP Topic	Comments
What are the barriers to running an effective NFIP program in the community, if any?	
Compliance History	
Is the community in good standing with the NFIP?	Y
Are there any outstanding compliance issues (i.e., current violations)?	
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	CAV 9/27/2018
Is a CAV or CAC scheduled or needed?	N
Regulation	
When did the community enter the NFIP?	5/15/1984
Are the FIRMs digital or paper?	Digital
Do floodplain development regulations meet or exceed FEMA or State minimum requirements? If so, in what ways?	
Provide an explanation of the permitting process.	
Community Rating System	
Does the community participate in CRS?	N
What is the community's CRS Class Ranking?	N/A
What categories and activities provide CRS points and how can the class be improved?	N/A
Does the plan include CRS planning requirements?	N/A

E.7.3. Mitigation Actions

The planning team for the City of Rocklin identified and prioritized the following mitigation actions based on the risk assessment. Background information and information on how each action will be implemented and administered, such as ideas for implementation, responsible office, potential funding, estimated cost, and timeline are also included. The following hazards were considered a priority for purposes of mitigation action planning:

- Drought & Water Shortage
- Floods: Localized Stormwater
- Pandemic
- Severe Weather: Extreme Heat
- Severe Weather: Freeze and Snow
- Severe Weather: Heavy Rains and Storms
- Wildfire

It should be noted that many of the projects submitted by each jurisdiction in Table 5-4 in the Base Plan benefit all jurisdictions whether or not they are the lead agency. Further, many of these mitigation efforts are collaborative efforts among multiple local, state, and federal agencies. In addition, the countywide public outreach action, as well as many of the emergency services actions, apply to all hazards regardless of hazard priority. Collectively, this multi-jurisdictional mitigation strategy includes only those actions and

projects which reflect the actual priorities and capacity of each jurisdiction to implement over the next 5-years covered by this plan. It should further be noted, that although a jurisdiction may not have specific projects identified for each priority hazard for the five year coverage of this planning process, each jurisdiction has focused on identifying those projects which are realistic and reasonable for them to implement and would like to preserve their hazard priorities should future projects be identified where the implementing jurisdiction has the future capacity to implement.

Multi-Hazard Actions

Action 1. Integrate Local Hazard Mitigation Plan into Safety Element of General Plan

Hazards Addressed: Multi-hazard (Drought & Water Shortage, Floods: Localized Stormwater, Pandemic, Severe Weather: Extreme Heat, Severe Weather: Freeze and Snow, Severe Weather: Heavy Rains and Storms, Tree Mortality, Wildfire)

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: Local jurisdictional reimbursement for mitigation projects and cost recovery after a disaster is guided by Government Code Section 8685.9 (AB 2140). Specifically, this section requires that each jurisdiction adopt a local hazard mitigation plan (LHMP) in accordance with the federal Disaster Mitigation Act of 2000 as part of the Safety Element of its General Plan. Adoption of the LHMP into the Safety Element of the General Plan may be by reference or incorporation.

Other Alternatives: No action

Existing Planning Mechanisms through which Action will be Implemented: Safety Element of General Plan

Responsible Office: City of Rocklin Planning Department

Priority (H, M, L): High

Cost Estimate: Jurisdictional board/staff time

Potential Funding: Local budgets

Benefits (avoided Losses): Incorporation of an adopted LHMP into the Safety Element of the General Plan will help jurisdictions maximize the cost recovery potential following a disaster.

Schedule: As soon as possible

Action 2. Enhance Public Education and Awareness of Natural Hazards and Public Understanding of Disaster Preparedness

Hazards Addressed: Multi-hazard (Drought & Water Shortage, Floods: Localized Stormwater, Pandemic, Severe Weather: Extreme Heat, Severe Weather: Freeze and Snow, Severe Weather: Heavy Rains and Storms, Tree Mortality, Wildfire)

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: The City and County play a key role in public outreach/education efforts to communicate the potential risk and vulnerability of their community to the effects of natural hazards. A comprehensive multi-hazard public education program will better inform the community of natural hazards of concern and actions the public can take to be better prepared for the next natural disaster event.

Project Description: A comprehensive multi-hazard outreach program will ascertain both broad and targeted educational needs throughout the community. The City will work with the County and other agencies as appropriate to develop timely and consistent annual outreach messages in order to communicate the risk and vulnerability of natural hazards of concern to the community. This includes measures the public can take to be better prepared and to reduce the damages and other impacts from a hazard event. The public outreach effort will leverage and build upon existing mechanisms, will include elements to meet the objectives of Goal 3 of this LHMP Update, and will consider:

- Using a variety of information outlets, including websites, local radio stations, news media, schools, and local, public sponsored events;
- Creating and distributing (where applicable) brochures, leaflets, water bill inserts, websites, and public service announcements;
- Displaying public outreach information in County office buildings, libraries, and other public places and events;
- Developing public-private partnerships and incentives to support public education activities.

Location of Project: Citywide

Other Alternatives: Continue public information activities currently in place.

Existing Planning Mechanism(s) through which Action Will Be Implemented: Existing County outreach programs will be reviewed for effectiveness and leveraged and expanded upon to reach the broader region.

Responsible Office: City of Rocklin in partnership with the County

Priority (H, M, L): High

Cost Estimate: Annual costs to be determined, and will depend on the scope and frequency of activities and events as well as volunteer participation

Benefits (Losses Avoided): Increase residents' knowledge of potential hazards and activities required to mitigate hazards and be better prepared. Protect lives and reduce damages, relatively low cost to implement.

Potential Funding: Local budgets, grant funds

Timeline: Ongoing/Annual public awareness campaign

Action 3. Open Space Fire Prevention and Vegetation Management Prescribed Grazing

Hazards Addressed: Wildfire

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: Open space areas provide natural breaks in development and are an asset to the community. Growth of trees, bushes, and natural grasses also could provide ladder fuels for fire if not maintained periodically.

Project Description: Fuel load management practices (grazing animals, chemical and mechanical weed abatement, mowing, discing, etc.) are implemented regularly to minimize fire fuel load concerns. Education and outreach with City residents on defensible space for fire concerns.

Other Alternatives: Do nothing.

Existing Planning Mechanism(s) through which Action Will Be Implemented: Routine Maintenance Agreement through California Department of Fish and Wildlife, City's General Open Space Management Plan. City's annual budget process.

Responsible Agency/ Department/Partners: Department of Public Services, Rocklin Fire Department, California Department of Fish and Wildlife, United States Army Corps of Engineers

Cost Estimate: Varies from year to year: $150K-500K annualy depending on projects and scope (this budget number includes work performed for creek maintenance as well)

Benefits (Losses Avoided):

Potential Funding: General Fund, CFD 5, CFD 6, various grants

Timeline: Year round/seasonal

Project Priority (H, M, L): H

Action 4. Creek Channel and Draining Way Clearing and Maintenance

Hazards Addressed: Fuel load and localized flooding.

Goals Addressed: 1, 2, 3, 4, 5, 7

Issue/Background: Open space areas provide natural breaks in development and are an asset to the community. Growth of trees, bushes, and natural grasses also can block storm water drain inlets and outlets over time and must be maintained in order to prevent local flooding concerns. Likewise, this same growth during the summer could provide ladder fuels for fire if not maintained periodically.

Project Description: Storm water drains and inlets are cleared regularly. Fuel load management practices (grazing animals, chemical and mechanical weed abatement, mowing, discing, etc.) are implemented

regularly to minimize fire fuel load concerns. Education and outreach with City residents on defensible space for fire concerns.

Other Alternatives: Do nothing.

Existing Planning Mechanism(s) through which Action Will Be Implemented: Routine Maintenance Agreement through California Department of Fish and Wildlife, City's General Open Space Management Plan. City's annual budget process.

Responsible Agency/ Department/Partners: Department of Public Services, Rocklin Fire Department, California Department of Fish and Wildlife, United States Army Corps of Engineers

Cost Estimate: Varies from year to year: $150K-500K annualy depending on projects and scope

Benefits (Losses Avoided):

Potential Funding: General Fund, CFD 5, CFD 6, various grants

Timeline: Year round/seasonal

Project Priority (H, M, L): H

Action 5. GIS Based Mapping of Pertinent Information that can be used by All Agencies in the Development of Plans and During Emergency Incidents

Hazards Addressed: Multi-hazard (Drought & Water Shortage, Floods: Localized Stormwater, Pandemic, Severe Weather: Extreme Heat, Severe Weather: Freeze and Snow, Severe Weather: Heavy Rains and Storms, Tree Mortality, Wildfire)

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: GIS systems provide support to first responders and managers to help with the decision making process.

Project Description: Populate/maintain various data layers

Other Alternatives: n/a

Existing Planning Mechanism(s) through which Action Will Be Implemented:

Responsible Agency/ Department/Partners: Information Technology Division

Cost Estimate: Incorporated into annual budget

Benefits (Losses Avoided):

Potential Funding: General Fund, CFD 5, CFD 6, L&L 1, L&L 2, Gas Tax, various grants

Timeline: Annual maintenance/project specific

Project Priority (H, M, L): H